

**THE IMPLICATIONS OF KNOWLEDGE
MANAGEMENT FOR LIBRARY AND INFORMATION
SCIENCE EDUCATION: A MIXED-METHOD
INVESTIGATION**

**A thesis submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy**

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone, the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement of the approved research program; and, any editorial work, paid or unpaid, carried out by a third party is acknowledged.

Afsaneh Hazeri Baghdadabad

Date:

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List of Abbreviations

ALA: American Library Association

ALIA: Australian Library and Information Association

ALISE: Association for Library and Information Science Education

ASIS & T: The American Society for Information Science and Technology

ASIS & T SIGKM-L: (ASIS&T) Special Interest Group on Knowledge Management (SIG-KM) Discussion List

CILIP: The Chartered Institute of Library and Information Professionals

CILIP LIS-EDU: (CILIP) Education Librarians Group Discussion List

IFLA: The International Federation of Library Associations

IFLA KMDG-L: (IFLA) Knowledge Management Section Mailing List

IM: Information Management

IP: Interviews Participants

JESSE: A listserv discussion group on library and information science education issues; moderated by Dr. Gretchen Whitney of the University of Tennessee, School of Information Sciences

KALIPER: The Kellogg-ALISE Information Professions and Education Reform Project

KM: Knowledge Management

LA: The Library Association, UK

LIS: Library and Information Science/Studies

LISEKA: Library and information science education for the knowledge age

MBA: Master of Business Administration

PLS: Plain Language Statements

QP: Questionnaire Participants

QUT: Queensland University of Technology

RMIT: Royal Melbourne Institute of Technology

SLA: Special Libraries Association

UNISA: The University of South Australia

UTS: University of Technology, Sydney

List of Publications

1. Hazeri, A; Martin, B “The implications of knowledge management for library and information science education”, paper presented at seven annual actKM conference 2006, held 25-26 October in Canberra, Australia (refereed conference). Published in: actKM Online Journal of Knowledge Management, Vol.3, Issue 1, 2006.
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3. Hazeri, A; Sarrafzadeh, M; Martin, B (2007) “Reflections of information professionals on knowledge management competencies in the LIS curriculum”. *Journal of Education for Library and Information Science*, Vol. 48, No. 3, pp. 168-186.
4. Hazeri, A; Sarrafzadeh, M (2006), “Knowledge management in universities and the role of university libraries”, *Irandoc Electronic Journal*, Vol. 5, No.4 (in Persian). Available at: http://www.irandoc.ac.ir/Data/E_J/vol5/hazeri.htm
5. Hazeri, A (2006), “KM education in librarianship”, *Informology* Vol.3, No.1&2, pp. 37-49 (in Persian).
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7. Sarrafzadeh, M; Hazeri, A; Martin, B (2006), “Educating future knowledge-literate library and information science professionals.” paper presented at Asia-Pacific conference on library and information education & practice (A-LIEP), 3-6 April 2006, Singapore. Organized by Nanyang Technological University, School of communication & information. Published in: *Proceedings of the Asia-Pacific Conference on library and information education & practice 2006: preparing information professionals for leadership in the new age*/editors Christopher Khoo, Diljit Singh, Abdus Sattar Chaudhry. 658 p. (115-121).

8. Sarrafzadeh, M; Hazeri, A; Martin, B (2006) "Knowledge management education for the LIS professionals: some recent perspectives", *Journal of Education for Library and Information Science (JELIS)*, Volume 47, Number 3, 225-244.
9. Sarrafzadeh, M; Martin, B; Hazeri, A (2006) "LIS professionals and knowledge management: some recent perspectives", Library Management 27(9): 621-635.
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Abstract

Knowledge Management (KM) is a popular topic emerging from the business sector, which has influenced many fields of study, among them Library and Information Science (LIS). As KM is quite recent, there is still much ambiguity as to its nature and its place in LIS education.

The current study sought to shed a light on these issues. To help achieve better understanding of KM and its implications for LIS education, the researcher employed a mixed-method approach, using both a web-based survey of LIS professionals and in-depth interviews with 18 LIS Heads of schools or senior staff at schools operating KM programs and courses.

The research indicates that although to an extent, confusion remains over the nature of KM and its relevance to LIS, there is at least recognition among the research community of the need for a proper understanding of knowledge management, as distinct from information management and of the importance of looking at KM from a generalist perspective. The findings further indicate that the LIS community is seeking to expand its boundaries into a wider professional environment than that of traditional librarianship, and that it sees KM as an effective vehicle for this purpose. The indications are also that apart from at the elective level, KM education should be offered not just as a distinct and separate track, but also as a subject pervading the entire LIS curriculum. The findings also highlight a need for greater integration between research and teaching in knowledge management, and for improved links between the curriculum and the outside world of KM practice. This implies the need for LIS schools to import aspects of KM practice into their activities. Participants also acknowledged the importance of matching KM education both to the needs of students and of the marketplace.

Furthermore, the research results highlight the necessarily multidisciplinary character of KM curricula, with the need for LIS curricula to focus on tacit knowledge and the human dimension of KM, as well as on business, management and organisational issues. The findings also support a collaborative approach to KM education in order to

achieve the creation of a holistic curriculum, with contributions particularly, from business schools, industry and practitioners.

Based on the findings of this study, a partial or improper understanding of KM among the LIS community, and a lack of realisation of the value of KM education among LIS students and educators, are key issues facing KM education in the LIS sector. To solve these problems, LIS schools not only need to provide courses in knowledge management, and promote it among the LIS community, but also they must actively market the concept and their own contribution to the field.

This thesis makes an innovative contribution to the literature of KM education, and to the understanding of the subject and its related concepts. It is also one of the few such pieces of research into the implications of KM for LIS education to have been conducted on a global basis.

Chapter 1: Introduction

1.1 Problem Statement

The Library and information science discipline has undergone enormous changes within the last three decades, some of these dictated by changes in technology and others by social and economic change. The advent of the Internet and related technological developments has not only increased stocks and flows of information (which now include digital), but also transformed the nature of library and information services. In the midst of these changes, knowledge management has emerged as a significant social and organisational development.

The multidisciplinary nature of knowledge management has ensured its influence on a wide range of fields of professional endeavour, including in this case, Library and Information Science. Although not everyone within the LIS community has welcomed this development (See for example the views of T.D. Wilson), others have embraced the challenges and opportunities it presents. Hence,

“At the core of the KM discourse in library and information science is the belief that since organisation of knowledge has been the strong suite of librarians, they must not only engage in, but also actively spearhead, KM initiatives” (Gandhi 2004, P.368).

With growing recognition of the mutual importance of LIS and KM therefore, LIS schools have responded to the need to educate the new generation of their graduates as knowledge-literate LIS professionals with the appropriate skills and capabilities. However, this response has taken a wide range of different forms, and has appeared at times to be somewhat haphazard and more a reaction to perceived threats of professional irrelevancy than a coherent set of actions. The multidimensional nature of KM, and different interpretations of the subject and its application, have militated against any broad consensus on curriculum content or on vehicles for provision. Course offerings currently range from general management level programs, to those aimed at specific professional groups and sub-groups. There is a need for in-depth research that sets the knowledge management education process for LIS professionals firmly within the wider educational environment, which identifies current trends, and on the basis of feedback from key LIS educational players, including educators,

investigates the options and alternatives available to LIS schools and provides a framework for future action. This research aims to fulfil this need.

1.2 Background

In the knowledge-based economy, information and knowledge have emerged as a form of capital. Essentially this capital is embodied in individuals, and its true value is realised only when it is exploited and applied. When individual information and knowledge is aggregated to become a corporate asset, then value is added to the activities of the organisation. This capture, sharing and leveraging of individual and group knowledge as a corporate asset is most likely to succeed where the principles and practices of knowledge management are applied. Although originally emerging in the world of business, the practice of knowledge management has now spread to the domain of non-profit and public sector organisations, including that of libraries. In structural terms this is apparent in the emergence of knowledge management sections within the activities of leading bodies such as the International Federation of Library Associations (IFLA), and also in the everyday world of library and information management practice. This latter has included the creation of new products and services with appropriate knowledge-linked titles for those people (hitherto known as librarians) involved in their delivery. It has also had a substantial effect on the activities of education and training institutions for the library and information professions, and in particular on their curricula.

However if library schools and the profession at large are to make the most of the opportunity that knowledge management presents for accelerating the career growth of individuals and the overall advancement of the profession, this process of educational change must be thorough and wide-ranging. Indeed, before any wholesale changes can be made, it is necessary first, to identify not only the educational needs of future students, but also the skill sets demanded by the market for knowledge-literate library and information professionals. The change process is of course already underway and not least in Australia. Here, the Australian Library and Information Association (ALIA) has embarked upon a project called *Library and information science education for the knowledge age* [LISEKA]. The purpose of the project is “To develop an education framework to underpin career-long education of future

generations of library and information workers, to sustain them throughout their careers” (Australian Library and Information Association). Important as it is, this is just one example of multiple attempts that LIS bodies and professionals are making in this regard. Current research in this area is serving to validate the current trends in interest in KM within library and information science.

1.3 *Research Questions*

Following the conduct of an extensive literature review, it was found that a relatively limited body of research has been conducted in the area of KM education. The scarcity of research material in this area, and the paucity of academic research and data pertaining to any ongoing dialogues or research that discusses KM education programs, has also been highlighted in previous research results (Sutton, M.J.D 2002; Sutton, Michael J.D. 2007). Meanwhile the importance of doing research in this area has been widely emphasised throughout the literature, with reasons including the confusion, variations and concerns expressed in this area (Bontis, Nick, Serenko & Biktimirov 2006; Southon, G & Todd 2001), as well as the significance of KM teaching and learning for the profession (Dunn & Hackney 2000), and the need for KM to be sustained by its own academic discipline, with guiding principles based on scientific research (Stankosky 2005). In seeking to contribute to this process, the following research questions have been investigated:

1. Are LIS schools emerging as major providers of knowledge management education?
2. What are the different perspectives on KM education exhibited by LIS professionals?
3. What are likely to be the most effective means of providing education programs in knowledge management for the LIS professions?
4. What is likely to be the most appropriate course content for knowledge management programs in library and information science schools?
5. Can existing LIS curricula meet the needs for knowledge management education or is input from other disciplines needed?
6. What are the core competencies for LIS people operating in knowledge management environments and how much current curricula can support them?

-
7. What are the main roles and responsibilities of LIS educational providers with regard to KM?
 8. What are the gaps between current levels of provision and those needed within the next five to ten years?

1.4 *Research Objectives*

In seeking to answer the above questions the following objectives have been set for the present research.

1. To investigate the need for KM education in the LIS sector.
2. To analyse the trend toward inclusion of a knowledge management element in the education of LIS students over the period 1997-2007.
3. To identify the approach to KM education in the LIS sector.
4. To understand the parameters of Knowledge Management as seen from within Library and Information Science Education.
5. To clarify the roles and responsibilities of LIS education providers in providing knowledge management programs.
6. To identify barriers to the implementation of knowledge management programs in library schools.
7. To recommend an educational framework for LIS professionals that takes account of the anticipated demand for knowledge management.

1.5 *Significance of the Research*

Knowledge and related intangibles are now the crucial element of value creation in most economies, and their management is of major significance to all organisations. Knowledge management has attracted significant investment within the last two decades, much of it in technology. It has also attracted huge interest from a range of professional and disciplinary bodies, resulting in an explosion in related activities including: websites, research, seminars, conferences, workshops, and educational programs responding to the market demand for knowledge managers.

There is a growing acknowledgement within the literature that the LIS professions have a serious contribution to make to the success of knowledge management. However, there is also appreciation of the likelihood that they would be more successful through the acquisition of additional characteristics gained through properly designed educational programs. Within the LIS literature indeed, the somewhat limited understanding of KM and its implications for the profession is still noticeable. The broad interdisciplinary nature of the subject has also complicated such matters as curriculum design and sources of provision, something that is as true of other professional fields as for Library and Information Science.

While there is a need for LIS schools to respond to the challenges of knowledge management education based on guiding principles from research, so far relatively little research has been conducted in this field. This thesis helps to address this deficiency by investigating current trends and practices in education for knowledge management, identifying existing gaps in provision and presenting some strategies for closing them.

1.6 *Research Design*

The main objective of this research is to explore the implications of knowledge management for library and information science education. The qualitative and interpretive methodology employed includes literature review and analysis of LIS schools' websites, followed by the conduct of Web-based surveys and in depth-interviews. The research population comprised:

- LIS professionals interested in the area of KM or in LIS education.
- Faculty members of LIS departments operating KM programs and courses.

The research methodology can be described as follows:

- Research philosophy: An interpretivist paradigm underpins the research
- Research strategy: Inductive
- Research approach: Qualitative and quantitative

-
- Research design: Mixed-method (inter-triangulation)
 - Data collection methods: Literature review, document analysis, web-based questionnaire, interview
 - Sources of data: National and international, including the mailing of Web-based questionnaires to members of the LIS community and of major professional bodies, such as The International Federation of Library Associations (IFLA), The American Society for Information Science and Technology (ASIS & T), The Chartered Institute of Library and Information Professionals (CILIP) and Australian Library and Information Association (ALIA).
 - Research location: The research while based in Australia has been international in scope with major input from English speaking countries.

1.7 Definitions of Research Terms

- LIS schools/departments

In this research the term LIS schools or departments generically refers to academic units offering library and information educational programs regardless of specific name or configuration. These units may also offer a range of other programs namely in information management or knowledge management.

- Program, course

Strictly speaking, a program is considered as the composite of requirements to obtain a degree, and a course as a unit within a program. However, this research adheres to everyday practice where the terms tend to be used interchangeably.

- Knowledge

There are different definitions of knowledge. One popular example is, “In general data are considered as raw facts, while information is regarded as an organised set of data. Knowledge is perceived as meaningful information; or the understanding, awareness, familiarity acquired through study, investigation, observation or experience over the course of time” (Psarras 2006, P.86) .

In perhaps the most authoritative attempt at definition, Davenport and Prusak (1998, P.5) defined knowledge as “A fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information”.

Davenport and Prusak further stated that “It [knowledge] originates and is applied in the minds of the knower. In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices, and norms”. According to Butler (2000, P.31) “Knowledge comes in many shapes and sizes. It can be, stored in databases, printed on paper, integrated into an organisation’s policies, procedures and reports, or contained within an employee’s memory”.

- Knowledge Management

There are various definitions of knowledge management many of which reflect a private sector perspective which regards LIS professionals as acting largely as support staff in KM activities. Typical of such definitions, and one that reflects a range of professional perspectives, is that which defines KM as “The process of creating, capturing and using knowledge to enhance organizational performance”(Bassi 1997, P.25). Although this definition acknowledges that knowledge and related intangibles are critical to the competitiveness and survival of organisations, it is non-specific with regard to professional contexts.

Still general in nature but more relevant to the library context, is Blake’s definition, which gives an indication of how and from where the specific contribution from LIS professionals might come.

“...The process of capturing a company’s collective expertise wherever it resides- in databases, on papers, or in people’s head- and distributing it to wherever it can help produce the biggest payoffs” (Blake 1998, P.12) .

The multidisciplinary nature of KM is captured in the Standards Australia definition, which defines KM as a multi-disciplined approach, that involves various professional groups for example, librarians, computer and IT people, organization theorists or human resource managers. In essence KM is defined as:

“A multi-disciplined approach to achieving organizational objectives by making best use of knowledge...” (Standards Australia 2003, P.3).

Common to most KM definitions is reference to the processes employed to exploit knowledge for the benefit of the organisation. Further exploration of the meaning of KM for the LIS community has been conducted in the present research.

- The LIS community

For the purposes of this research the LIS community is viewed as comprising three main and overlapping groups of professionals, librarians, information professionals and knowledge professionals.

- Librarians

For present purposes, two groups of librarians can be identified. The first is that group which while aware of KM, remains focused primarily on mainstream librarianship. The second group comprises those librarians who are advocates for involvement in knowledge management, either as a standalone activity or as an extension of librarianship. However, the degree to which these nomenclatures overlap in practice can be seen from the fact that the SLA describes *special librarians* as “Knowledge professionals who provide focused information and service to a specialized clientele, having an impact on their success, mission, and goals”, and again, as “Information professionals who work in corporations, media, finance, science, research, government, academe, museums, trade associations, non-profit organisations and non-traditional enterprises” (Clar 2003, P.1486).

- Information professionals

An Information Professional (IP) as described by SLA (2008) strategically uses information, through the development, deployment, and management of information resources and services, in his/her job to advance the mission of the organization. According to SLA therefore, IPs include, but are not limited to, librarians, knowledge managers, chief information officers, web developers, information brokers, and consultants. Whereas in the wider world, the term information professionals is one that applies across a wide range of professions and para-professions, in this thesis, it

applies specifically to those people who are members of national and international library and information science associations.

- Knowledge professionals

In general terms, the designation ‘Knowledge professional’ has been used to draw a distinction between people who work with information and those who work with knowledge (Rikowski 2000). More specifically, these professionals have been considered as:

“People who will extract knowledge from those who have it, put it in structured form, and maintain or refine it over time” (Davenport, TH & Prusak 1998, P.110).

The term is currently applied in very non-specific professional and non-professional contexts to include anyone working or claiming to work in KM, including librarians and information scientists.

- Knowledge workers

There is a clear distinction between knowledge workers and knowledge professionals. As indicated in the literature knowledge workers also called knowledge-oriented personnel may include everyone who works in a knowledge-driven organisation (Davenport, TH & Prusak 1998, P.108). While knowledge professionals are experts in this area, and act as a bridge between knowledge workers and decision-makers (Hawamdeh, Suliman 2003, P.161). In this sense, as Davenport and Prusak note, managing knowledge should be everybody’s business and every worker should be considered a knowledge worker. This distinction, however, is not always considered within the literature and in this thesis.

1.8 Structure of the Thesis and Chapter Outline

Following this introductory chapter, Chapter 2 provides an extensive review of the literature on KM education, mainly in an LIS context, but also from drawing on mainstream KM sources. The relevant literature has been extracted from a number of different databases, such as ABI/Inform Global (ProQuest), Business Source Premier (EBSCO), Expanded Academic ASAP (Gale), and Library and Information Science

Abstract (LISA). Chapter 3 provides an overview of the methodology adopted in this study, with a discussion of methodological issues.

Chapter 4 is an introduction to the analysis and interpretation of mixed survey and interview data, including demographic information about participants. Chapters 5 to 9 present the main analysis of the data collected from both the online survey of the members of LIS mailing lists, and from the interviews conducted with Heads of LIS schools or their senior staff. Discussion of the findings has been synthesized with data analysis in these chapters. Chapter 5 reviews the findings on KM perceptions. Chapter 6 addresses the question of whether LIS schools should take KM seriously. Chapter 7 discusses KM education in universities. Chapter 8 reports on the findings on the implementation of KM courses. Chapter 9 deals with findings to do with challenges facing KM education and with recommendations for LIS schools. Chapter 10 concludes with a review of the key findings in the context of the research questions and objectives. A discussion of the importance of the thesis and the implications of the study is also included in this chapter. Chapter 10 also outlines the limitations of the work and makes some recommendations for future research.

Chapter 2: Literature Review

2.1 Introduction

The previous chapter was a general introduction to the research. This chapter overviews a number of topics from the literature, with relevance to the thesis. The chapter will commence with a review of the core construct, KM. An overview of the evolution of KM education follows, leading into a review of the linkages between the two fields, and a reassessment of KM education for LIS professionals. The literature review continues with a comprehensive study of KM competencies and curricular issues, and confirms the interdisciplinary nature of KM and the need for collaboration in the matter of education for KM.

2.2 Background

The library and information science has undergone almost continuous change for decades, some of it dictated by advances in technology and some owing to social, economic and organisational developments. The advent of the Internet and subsequent technological developments within the information industry has transformed the nature and range of library products and services. The familiar phenomenon of information overload has attained new heights, with instant and unrelenting resource implications for the LIS professions, not least in the fields of education and training. Concurrent with such developments, which include the commoditisation not only of technology, but also of many LIS products and services, has emerged the phenomenon of knowledge management. Debate continues as to the nature and meaning of knowledge management, with leading professionals alluding to the possibility of its being an oxymoron and even more critically dismissing it as nonsense (Wilson 2002b). Others have been more positive, calling for the full engagement of the LIS professions in order to take advantage of emerging opportunities (Abell, Angela & Oxbrow 2001; Butler 2000; Davenport, E 2004; Hawamdeh, Suliman 2003; Koenig, Michael ED 2005; Koenig, Michael ED & Srikantaiah 2004; Loughridge, Brendan 1999; Martin, Hazeri & Sarrafzadeh 2006; Sutton, Michael J.D 2007).

2.3 *KM: The Core Construct*

It is not hard to see why people continue to be critical of a subject which is so heavily dependent on context and perception, and where one of the few areas of consensus appears to be acceptance of the argument that definitions reside, if not in the eye of the beholder, then certainly in context. Among these definitions, as explained in the previous chapter, there are some which gives little indication of how or where the specific confirmation from LIS professionals might come, although such contribution is clearly intended to be implicit. This is supported elsewhere by claims that, since the organisation of knowledge has always rested strongly with librarians, it is they who must not only engage in, but also actively spearhead, knowledge management initiatives (Gandhi 2004). It has been further claimed that KM employers are beginning to look for LIS graduates owing to their ability to organise and classify corporate knowledge (Lai 2005). So far as LIS professionals are concerned, they have been exhorted to have faith in their own abilities and promote them, not least their abilities in social networking (Reardon 1998). There is at least anecdotal evidence (of the kind for example that has emerged in this research project), that while not perhaps always spearheading such initiatives, there is LIS involvement across the public sector, and in the legal and financial services and pharmaceutical industries, including at the iconic knowledge management company, Buckman Pharmaceuticals, now Bulabs (Buckman 2004).

2.4 *Pointers from the Literature*

As pointed out several years ago, there are many versions of knowledge management rather than a single unified or unitary approach (Despres & Chauvel 2000). This view is supported by evidence of input from a wide range of disciplines from fields such as:

- Philosophy and economics, including epistemology (Cook & Brown 1999; Duguid 2005; Polanyi 1966);
- Resource and knowledge-based theories (Barney 1991; Grant 1996; Spender 1996);
- Various sub-disciplines of management such as accounting and finance (Lev 2001), Strategy (Porter 1991), and organisational learning (Crossan, Lane & White 1999);
- Knowledge-based organizations (Choo 2000; Edvinsson & Malone 1997; Sveiby, KE 1997);

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- Knowledge strategy (St. Onge & Wallace 2003; Sveiby, KE 2001; Zack 2002);
 - Culture (De Long and Fahy 2000; McDermmott and O'Dell 2001);
 - Human Resource Management (Lengnick-Hall & Lengnick-Hall 2003; Newell et al. 2002);
 - Management of Intangibles (Bontis, N et al. 1999; Guthrie 2001; Sveiby, KE 1998);
 - Chaos and complexity theory (McElroy 2000; Snowden, D 1998; Snowden, DJ 2002; Stacey 2001).

Much of the emphasis in this literature has been on the emergence of knowledge management as a private sector phenomenon, with interest in public sector knowledge management developing much later (McAdam & Reid 2001; Skyrme 2004). This interdisciplinary provenance, which in a practical vein has been paralleled by activity in the consulting world (Gurteen 1999; Koulopoulos & Frappaolo 2001), has matured to the point where there are clear divisions, not only between those who would view knowledge management through a technological lens (Alavi & Leidner 2001), but also between those who think in terms of ages and stages (Koenig, Michael ED 2002; Snowden, DJ 2002) on the one hand, and of generations on the other (Firestone & McElroy 2003; Wiig, K 2004). It seems clear that whatever the particular form and context, knowledge management has now attained a certain level of maturity, and with it, a place in the broader managerial and organisational environment.

2.5 The Evolution of KM Education

The broad multi-dimensional character of KM, has led to the involvement of people from many disciplines. As a consequence, multiple perspectives, initiatives, procedures and strategies have been implemented in the knowledge management field. Knowledge management discourses have been implemented within many educational entities, including computer and business schools, as well as library and information science departments, and various approaches have been proposed for designing and conducting knowledge management education programs.

It is clear that even before one can comment on broad trends in the provision of knowledge management education within the LIS sector, some allowance must be

made for differing perceptions and interpretations of knowledge management (what it is) and also, of the not uncommon tendency for organisations to re-label or re-badge products, services or entities when often little change of real substance will have occurred.

That the LIS community does have a viable interest in the field is reflected in the wide level of involvement by relevant professional bodies, including international and national associations and groups such as; IFLA, ALISE, ALIA and the SLA. Paralleling such activity, has been the emergence of new library products and services and to some extent, of changes in nomenclature for institutions, their services and staff, with terms such as Knowledge Centre, Knowledge Services, and Knowledge Manager appearing alongside more traditional designations. To some extent these changes reflect the influence of calls for new recruitment strategies for LIS students to take account of changing job markets (Martin 1999), and for significant changes in the mindset of LIS educators (Milne, Patricia 1999). These developments have been accompanied by signs of reform in systems of education and training for LIS in order to meet the needs of the future (Tenopir 2002). To date, these reforms appear to have been tentative and piecemeal, reflecting both a lack of consensus or shared understanding of knowledge management among the LIS profession, and perhaps even a crisis of confidence in face of the unfamiliar and threatening. This might be attributed to the fact that KM is a quite recent development and still not well established. It is for this reason that Sutton et al. (2002) observed Institutions of higher learning are designing and developing KM educational programs within an uncertain theoretical and practitioner climate, and based on his research findings reached the conclusion that there is a lack of complete consistency across KM educational programs (Sutton, Michael J.D. 2007) .

In addition to higher education providers, many professional institutions, as well as for-profit and non-profit organizations, are also taking advantage of opportunities in the knowledge management training field. This of course includes professional associations and related bodies within LIS, but again there is the issue of perception and of its effect on the kinds of programs on offer. Providing a list of available KM courses, mainly in the UK, D'Arcy (2000) refers to the increasing number of KM

education courses over time, and maintains that not only academic institutions, but training/consultancy organisations have started planning such courses.

There is also evidence within the literature to support the assertion that KM education first appeared within the business/industry sector. According to Chen, Chie et al. (2002) business administration was the first discipline to sense the manpower market for KM, in providing on the job training for their knowledge workers. Seemingly, KM took a long time to reach the university sector, because as McInerney (2000) pointed out while the KM literature is growing fast, programs to teach students KM are relatively rare. This delay, as Ruth et al. (1999) claim, reflects a general problem to do with the uptake of industry practice into university courses. Ruth et al. warned the academic sector that if it did not respond to the needs of the KM workforce quickly enough, companies would do all of the teaching in their own schools, with little assistance from universities. They supported their argument with reference to the fact that this kind of thing had already taken place at companies such as Motorola, Disney, General Electric, and General Motors.

The first appearance of KM education in the academic sector is, therefore quite recent. According to Lank (2004), in 1995 a group of people from a range of disciplines across the UK Open University, investigated available courses on the topic of knowledge management and were unable to find a single dedicated course anywhere in the world. She then introduced the first purpose-designed MBA module of 'Managing knowledge' at that university in 1999, and maintains that while business-school programs profess to cover the topics that are of greatest importance to managers, managing knowledge was not seen as a valid part of the curriculum until then and was still only recognised by a relatively small number of institutions.

Although KM was at first regarded as a management or business topic, Ruth et al. (1999) predicted that KM would evolve into a robust body of concepts and practices that would be taught far beyond the business sector. The body of knowledge and practice comprising KM, as Ruth et al. underline is too broad to limit KM to courses taught occasionally in schools of business. They regard KM as having legitimate roots in philosophy, sociology, and psychology and consider it to have relevance across the

academy, perhaps primarily in business, but also in computer science, public policy, and medicine, at a minimum. Recognition of this holistic, multifaceted nature of KM, therefore led to its adoption within the educational frameworks for a number of other academic units, such as LIS.

In order to trace the development of KM within the LIS education sector, Willard and Wilson (2004) conducted an analysis of the use of the term *knowledge* as distinct from data or information, in LIS course descriptions. They reported the occurrence of the term in four course descriptions spread over three universities in 1991, in ten course descriptions spread over five universities in 1997, and in 16 course descriptions spread over six universities in 2003. In doing so, they acknowledged this was a crude measure, and pointed out that in some cases the word *information* may have been linked with other words in a way which led to its interpretation as knowledge.

This level of engagement with the subject, where apparently some 37 percent of courses in the field were being provided by graduate schools of library and information science, led to the point where some began to claim that the LIS profession had pioneered education for knowledge management (Sutton, 2002). Given that there were omissions in the data for Australian institutions mentioned in Sutton's research (involving not just LIS schools but also those in other disciplines) it would be unwise to take such claims at face value. In the Australian context, however, it is fair to say that most of the leading LIS schools are now offering either full programs in knowledge management, or knowledge management modules within other courses (eg. UNISA, UTS, RMIT, and QUT). Experience elsewhere has been that often where an LIS school exists, it will serve as the main location for such programs, frequently at an interdisciplinary level. Otherwise, the knowledge management program has been absorbed by business schools and, less frequently by engineering schools (Srikantaiah 2004). Examining a sample of 37 knowledge management courses offered by universities located in five countries (Australia; Canada; Singapore; the UK; and the USA), Chaudhry and Higgins (2003) reported that the highest number of KM courses were located within masters degrees in information systems or studies (40%) with the next biggest grouping falling within the purview of the master in business administration (35%). Parycek and Pircher (2003) also referred to the results of a

comparative study of KM educational programs worldwide in 2002. This research identified 20 academic institutions with educational programs dedicated to KM. Among them, 60% had a background in LIS, based on revisions in their existing programs, or offering an alternative for another target group of students.

Over the last decade, the majority of LIS schools has now realised the importance of including KM in their portfolio of programs. According to Lorrington (2007) for example, the results of a questionnaire-based survey comparing the existing content of European LIS curricula and what would be considered to be core, revealed that 86% of LIS schools that participated in the project confirmed the existence of knowledge management as a subject in their curriculum. Although as Sutton (2002) has pointed out, there is a big difference between programs that just embed some KM relevant courses into their offering, and those that devote the program entirely to KM, there is still an indication of a shift in focus toward knowledge management within the LIS education sector. According to Sinotte (2004, P.196) therefore, “While there are numerous educational courses focused on KM, there are relatively few entire programs devoted to it”. Some would of course, attribute this to the fact that organizations see a limited involvement for LIS professionals, because of their perception of a profession that seldom engages with the business (Rikowski 2002). For others however, as Sinotte (2004, P.196) points out “A formal degree in KM is like getting a degree in vice-presidency, it simply makes no sense”.

Beyond the KM context, it seems that the LIS profession is now realizing the importance of commitment to a wide spectrum of management and business issues. As an example, proposing a cluster of management and related subjects for inclusion in European LIS curricula, Georgy et al. (2005) consider KM as an additional specialized management subject that needs to be integrated with library management along with other management and business topics like quality management, project management, marketing and so forth. In their opinion “Knowledge about knowledge and tools supporting the knowledge environment may feed the tendency for increasing generalization of education” (Georgy, Lepik & Petuchovait 2005, P.225). Already, where LIS schools are involved with KM, traditional expertise in the organisation and retrieval of information has now been transferred into areas such as

content management and the development of metadata. Other new directions include more emphasis on the theory of knowledge and on the behaviour of people as generators of knowledge.

2.6 LIS and KM: Is There an Alliance?

Knowledge management is a relatively new topic in business circles but it has already gained acceptance among a wide range of industries and professions. Indeed, “KM knows no boundaries, neither academically nor in practice” (Sutton, Michael J.D. 2007, P.8). This has resulted, not only in competing claims for ownership of the area, but in the identification of skill shortages, and of the need to enhance education and training for knowledge management. According to Abell and Oxbrow (2001, P.123) “KM roles and teams present good opportunities for many professions- not least information professionals- whose skills are among the most crucial KM enabling skills”. Librarianship is hence, one of the professions not only vying for a position of prominence in knowledge management, but also whose track record in the field is widely acknowledged. “Here is a discipline which highlights our skills, which admits that our job is valuable for the firm’s business strategy, which offers us the potential for new development fields and which is strongly supported by top management” (Rossion 1998, P.157). And again, “The information scientist of today has a substantial foundation upon which the knowledge manager of the (near) future can be built” (Reardon 1998). This recognition has been more specifically expressed by other commentators such as for example Amos and Chance (2001, P.47), who argue that “With the growth in interest in knowledge management, [information professionals] skills such as thesaurus construction, abstracting and indexing have actually come back into vogue”.

Indeed, the contribution of LIS professionals to knowledge management has been widely acknowledged in the professional literature. The flavour of this recognition is well represented in the views of Abell and Oxbrow (2001, P.162), to the effect that “The information profession has the theoretical basis and practical skills to provide the essential elements of knowledge management”. Reflecting on the results of a survey and focus group of LIS professionals in Australia Todd and Southon (2001, P.322) asserted that “Despite whatever new skills would be required for knowledge

management, there was strong agreement that the traditional information management skills would be the basis of what they would be able to contribute to the organisation". On the importance of these skills for KM success, however, there is a large array of opinion that attests that information management skills are at the heart of any successful knowledge management strategy (Amos & Chance 2001; Hawamdeh, Suliman 2003). Information management, indeed, has been identified as an important component of KM, and its constituents including, knowledge organisation and information retrieval have been highlighted as the librarian's unique area of expertise (Lorrington 2007). Although identified as a management-oriented field of expertise, Lasic-Lazic et al. (2003) certify that KM builds upon, and applies knowledge organisation methods and tools, and embraces the whole body of expertise from information science. The implication of this recognition they argue, is that KM has already become part of the information studies curriculum in many library and information studies schools. According to Morris (2001, P.2), therefore, "Since information and knowledge management are inextricably linked it is not surprising that LIS schools are taking an active interest in meeting the demand for suitable courses".

The literature also gives acknowledgement to other special advantages to the inclusion of LIS professionals in KM practice. As for example Sinotte (2004, P.196) who argues that "LIS professionals bring to KM a client-focused viewpoint, where technology is important but not dominant". Moreover, there are references, elsewhere within the literature that "On the evidence of job specifications for knowledge management roles, information specialists clearly have the competencies needed" (Amos & Chance 2001, P.51). This has also been observed in more recent years by for example Sutton (2007), who reassures readers that many of the skills and competencies described for KM professionals are parallel to those used to describe the roles and skills of special librarians.

Nonetheless, this endorsement is to some extent conditional on a more pro-active response by the LIS professions. According to Corral (1998) "The core skills of library and information professionals are both relevant and essential to effective knowledge management, but they are often under-utilised and under-valued". She reminds readers that "Surely it is our job to put this right!". Indeed, to become key

stakeholders in knowledge management, LIS professionals need to move out from their familiar operational environments, and demonstrate their relevance by pursuing emerging opportunities in knowledge management. For this to happen, these professionals must understand the wider value of their own skills, and exploit their potential applications in a knowledge management environment. This will require, not only enhanced self-knowledge, but also an understanding of how LIS skills can be applied in a new and often commercial context. To leverage these LIS skills to best effect, library and information professionals will need to acquire other skills. This will entail identification of the mix and level of additional skills required. However, the first step is to believe in themselves, and then to embrace knowledge management opportunities with confidence. As Abell and Oxbrow (2001) point out, librarians need to understand the value of information skills, take opportunities to acquire new skills, and recognise that the skills they have are the basis for an exciting career.

Hence, despite possessing some of the main prerequisites for knowledge-related work, in order to thrive in a knowledge management environment, LIS professionals will still need to:

“Develop confidence to apply their skills in unfamiliar situations; develop understanding of organizational strategies and challenges; comprehend the complex array of knowledge/ information available within an organization; develop new skills for working with knowledge teams; and, acquire attributes needed to succeed in a knowledge culture” (Rehman & Chaudhry 2005, P.2).

So, there is an observation within the literature that “Knowledge management is an emerging discipline within which information and library science rightfully resides” (Reardon 1998). However, for information professionals “Opportunities to be involved in KM may need to be sought out, and the skills and knowledge of this profession may need to be ‘sold’ and then proven before our potential contributions will be understood” (Sinotte 2004, P.197). Moreover as Reardon (1998) pointed out, LIS professionals have a wide range of the skills required for KM, but their skills do not, of themselves, constitute knowledge management. Therefore as he remarks they still need to develop and modify these skills to be capable to meet the needs for managing knowledge.

2.7 KM Education: Is it Necessary for LIS Professionals?

As KM is still at the developing stage, debate continues on its academic status, including its relevance to LIS education. The following are typical rationales appearing in the literature in support of the inclusion of KM in education for LIS:

2.7.1 Emergence of the knowledge economy

Recognition of the importance of knowledge and of its effective management in the new knowledge-based economy, has led many organisations to make substantial investments in KM. A growing volume of publications on KM related issues has emphasized the links between KM achievements and organisational success. As Krivonos et al. (2005, P.545) observed “Many organisations are implementing KM programs because of its proven benefits”. According to Abell and Oxbrow (2005) “As the companies become more explicitly reliant on effective management of their knowledge and information, so the opportunities for information professionals are opening up”. Furthermore, KM will continue to demonstrate considerable impact on all kinds of organisations including the academy, business and management practices, and library and information science sources and services (Sutton, Michael J.D 2007). Since knowledge promotion is a fundamental objective of universities, either through education or research paths, success in KM projects is important for academic institutions. Hence, the impact of KM on distance-education has been clearly appreciated in academia over recent years. In this regard, Norris et al. (2003, P.16) argue that “Knowledge sharing – if it sparks innovation, changes in organizational dynamics, and new sources of value – can also make the difference in academia and e-learning”. Meanwhile, its potential benefits for higher education and various functions of academic institutions has been recognised by many commentators. For instance, Southon et al. (2002) refer to the value of KM in managing teaching resources. McManus (2002) describes universities as prime examples of ‘knowledge organisations’ and challenges them to show as much interest in or acceptance of knowledge management as a management practice as they have in introducing knowledge management to their teaching and research programmes. Corral (1998)

points to the advantages of KM in managing some specific types of explicit knowledge, such as minutes of meetings, and lecture notes, as well as route maps and directories, in the form of expert locators and other resource guides. She also refers to the effectiveness of KM in formalising processes for capturing best practices in course administration and grant applications, and as an efficient tool for creating knowledge networks for discipline-related discussions and for linking academic networks with their library counterparts.

Libraries have also recognised the benefits of KM applications for the advancement of their products and services, in many cases resulting in their re-creation as knowledge centres. Gandhi (2004) provides a detailed discussion on KM applications for reference work in libraries, and highlights the importance of tapping the communal knowledge of reference librarians.

Accordingly, as knowledge represents a key strategic organisational asset, and its management has become crucial, it is obvious that LIS professionals require a good understanding and knowledge of this area, and need to learn how to manage not just information, but also knowledge within or outside the organisation. The essential argument for providing academic educational programs in this field is that “KM as an emergent discipline is important to study, if not for the undue attention it is gaining, or the corporate and academic power it is gradually accumulating, then certainly because it is beginning to present a significant budgetary undertaking for the enterprise” (Sutton, M.J.D et al. 2002, P.475). To facilitate this development, “Universities and educational institutions (suppliers of knowledge) as well as private businesses and public sector organisations (users of knowledge) are in need of an integrative discipline for studying and learning about knowledge and its role in the economy” (Hawamdeh, Suliman 2003, P.158). The significance of this educational territory is in fact, so evident, that it is claimed that “KM is such a powerful and vital topic that ...it will someday be taught throughout the academy” (Ruth, Theobald & Frizzell 1999, P.290).

2.7.2 Opportunities and threats

The extensive LIS literature on the subject predicts a range of opportunities emerging from the adoption of KM, not just for the whole profession, but for its various constituents, including its educational institutions and students. At the lowest level, as argued by Todd and Southon (2001), KM is regarded by some people in the field as a rejuvenator of the image of librarians, or as an accelerator for the rejuvenation of the profession. This latter effect is for example, evident in Reardon's (1998) assertion that if the LIS profession does not respond to KM quickly enough, it will be in danger of being left out. There are also significant references to the potential of KM as a vehicle for members of the profession to renew their alliances with organisations, and a possible means by which they can add value to the bottom line of the organisation. This view has been supported by a number of commentators including Abell and Oxbrow (2001), Hawamdeh (2003), and Malone (2003). Abell and Oxbrow (2001, P.168) noted that "It could be the opportunity to acquire experience that enables professional expertise to be applied with more obvious benefit". The ignorance of business goals has been considered as a major barrier to LIS engagement in KM by many in the field (Ferguson, Sarrafzadeh & Hazeri 2007). Before the emergence of KM, librarians of course have always been taught to bear in mind the mission of their parent organisation, and were expected to work to align with the overall objectives of the organisation. However, as pointed out by many in the field, they usually have been seen only as service providers, operating in discrete or autonomous or semi-autonomous units with very little, or marginal contribution to the achievement of core activities of their organisation (Loughridge, Brendan 1999; Southon, G, Todd & Seneque 2002). Hence, as Butler (2000, P.42) remarks "Knowledge management is an exciting opportunity for the information professional to practice what we've been preaching for years". Taking advantage of these opportunities in knowledge management, and integrating the knowledge professional into the business process would be of mutual benefit, and would facilitate the identification of knowledge management as a recognized profession (Hawamdeh, Suliman 2005).

Some have argued that KM is not a new theme, with its roots traceable back to the ancient Greeks¹. However as Dunn and Hackney (2000, P.270) argue “The contemporary opportunities afforded through IT developments would seem to open many previously incomprehensible pedagogic opportunities”. The inclusion of this topic within LIS curricula could enhance the appeal of LIS education, and would benefit LIS departments. This has been reported by Logan and Hsieh-Yee (2001), and Chaudhry (2007, P.5) to the effect that, “The expansion in LIS curricula provided opportunities to LIS programs to expand their markets beyond traditional groups of students”.

Another advantage proposed for KM is that learning more about this topic could provide better employment prospects for graduates. In terms of career development, Abell and Wingar (2005) among others, refer to the existence of real opportunities for LIS professionals to become community facilitators, web producers, project managers, and e-commerce specialists, etc.

The potential of KM, for expanding the markets for LIS graduates has led to an ample enthusiasm in taking advantage of the opportunities made available by this new discipline (Aiyepoku 2001; Tang 1999). According to Sutton (2002) the expectation that the new knowledge-based economy will be the place to find an interesting and financially rewarding career has influenced the attention of candidate graduate students in the emerging discipline of KM. The prominence of the KM theme in the IM curricula of many schools is considered by Dunn and Hackney (2000) as a sign of the growth of such interest. The increasing popularity of KM education among LIS students has also been reported in Rehman and Chaudhry’s study (2005) investigating perceptions of KM education among heads of 12 LIS schools from North America, Europe and the Pacific region. According to these sources, in the area of student enrolment there is broad agreement, with the idea of launching an awareness campaign to make students aware of what the KM was and what potential did it offer as a career choice. From the responses that Rehman and Chaudhry received, they considered a lack of realisation of the importance of this new field as the reason for

¹ A discussion of the historical foundations of KM is presented in Sutton’s (2007) research.

the limited inclusion of KM components in LIS programs. They pointed out that the potential of KM and the importance of this new field for information professionals had to be genuinely understood by LIS academics.

For LIS students moreover, the literature has shown that KM has not only opened up new job markets for LIS graduates, but also that it has given them the chance of expanding their traditional competencies or of gaining extra capabilities. The effect of this opportunity on for example, the enhancement of student potential for participation in a diverse job market and lifelong learning has been attested by Tang (1999).

And again, “Breaking new ground, delivering the promise and potential of leveraging organisational knowledge, might be significantly rewarding for our students” (Dunn & Hackney 2000, P.274). Any potential competitive advantage to LIS graduates in the job market has, however, been seen as contingent on provision of the appropriate educational offerings:

“Strategically we could be optimistic and feel that KM might afford our students the opportunity of acquiring competence towards competitive advantage. Realistically, we can predict with greater certainty that an inadequate teaching of KM will almost certainly leave individuals with a competitive disadvantage” (Dunn & Hackney 2000, P.274).

In addition to the advantages of including KM in LIS education, certain disadvantages of non-involvement have been identified. As KM is a competitive field, some would argue that if LIS schools do not respond to the need for KM education appropriately, others might do it (Hawamdeh, Suliman 2003). This is of course not a sufficient rationale for LIS or other disciplines to get involved in teaching KM, but it is a necessary reminder. Hence, Hawamdeh (2003, P.159) states that “It is not surprising to find that in some instances, business schools are beginning to lay claim to areas of expertise that have traditionally been the mainstay of information departments”.

2.7.3 Market demands

Current developments in society, such as the continuing advances in IT, have profoundly influenced the LIS field. As can be seen from the study of job advertisements, over the last decade, a growing market in non-traditional jobs for LIS

professionals has emerged with “An expansion of so-called information market made LIS graduates, once bound to the libraries as the main employment place, pursuing their careers in a variety of contexts – consultancy, finance, law business and government, etc.”(Georgy, Lepik & Petuchovait 2005, P.217). This shift in the workplace clearly demands other capabilities among graduates, which have been indicated in a recent study of positions vacant announcements for LIS graduates. This study examined job advertisements in the Sydney Morning Herald over a four week period in each of the following years: 2004, 1994, 1984 and 1974 (Kennan, Willard & Wilson 2006, P.27). This revealed that “The percentage of work requiring ‘established skills’, skills traditionally used in libraries or by librarians, over the period has decreased from 100% (1974) to less than 50% (2004) of the positions advertised”. According to Kennan et al. (2006, P.34) , “Jobs advertised in 1974 all called for skills and competencies clearly within the LIS domain, whereas by 2004 only 44.7% of positions advertised asked for established LIS skills”. The LIS education sector of course, as reflected in results of the KALIPER research project (Durrance 2000), has been responsive to these shifts in market demand, nurturing graduates for jobs beyond those of the traditional library realm. Moreover, the shift in focus of LIS education to cater to a wider marketplace than the traditional one, has been welcomed by LIS educators (Willard & Wilson 2004).

The rise of knowledge management over the two decades has had the effect of enlarging the career paths of LIS professionals. According to Southon et al. (2002, P.1048), “There is an increasing number of job opportunities focusing on knowledge management. Job titles such as Chief Knowledge Officer, Knowledge Manager, Knowledge and Training Coordinator, Knowledge Analyst, Knowledge Operations Manager, and Director of Knowledge Systems, are appearing in the employment columns of major newspapers, in databases of career services, and the like”. Demand for KM jobs has been so great in recent years, that many Head-Hunting agencies have emerged to help companies with vacant KM positions to find suitable candidates (Lai 2005). The strong demand in the job market for knowledge professionals has been identified as a clear demonstration of the need for KM education by Koenig (1999). The ever-increasing demand for knowledge professionals also, therefore, prompted the provision of a formal qualification for knowledge management .

In the face of such developments, LIS schools found themselves in need of additions and new course offerings in this area. According to Hawamdeh (2003, P.157), “Many educational institutions around the world today are starting new KM programs responding to market demands and trying to meet the aspirations of many of the information and knowledge professionals who would like to see themselves as knowledge leaders, knowledge managers and content specialists”.

As Rehman and Chaudhry (2005) observed, most of the initiatives in KM education are clearly market-driven. This is only to be expected given that universities are predominantly self-financed. Hence, “British and American schools of information studies are purely market driven and thus very eager to respond to the demands of the job market. They are much quicker to react to the needs for new expertise and different universities are competing to attract the desired number of students by offering new degree titles, new courses appealing to the market and desirable content to go with them” (Lasic- Lazic, Slavic & Zorica 2003, P.3). This has also been referred to by Southon et al. (2002, P.1057), where “The commercial focus of the educational institute means that initiatives will be more sensitive to market opportunities than to the current skills and interest of current operational staff”. As a practical example, falling enrolments, revealed in a study of Australian LIS educational programs, were identified as drivers in curriculum change by two schools, with that at the Royal Melbourne Institute of Technology seeking to widen its appeal through the area of knowledge management (Willard & Wilson 2004).

The need for educational preparation for KM is indeed, so urgent that Hawamdeh (2005, P.1205) argues that “Beyond the development of suitable academic programs, it is important that the academic departments also seek to provide post-qualification development opportunities, as this would surely provide the platform for students, employers, and academics’ interactions”. This trilogy according to him “Is necessary to fuel the further development of knowledge management as the latter matures as a profession”.

In an earlier survey of 189 companies to assess the need for a KM program in Singapore, reported in *“Designing an interdisciplinary graduate program in knowledge management”*, Hawamdeh noted that the occupants of KM posts had qualifications in Engineering, Computer Science, Economics, and Business Administration. Referring to the ongoing adoption of KM in organisations and the burgeoning market for knowledge practitioners, Hawamdeh (2005, P.1204) stressed that “As the number of [KM] graduates increases dramatically and will continue to increase in the near future, it is imperative that the profession insist that its practitioners hold an academic professional qualification that is truly representative of the profession”. This to some extent seems to be happening, as Zimmerman (2002) argues that “While most of the programs have been around less than a decade, graduates have gone on to work as IT professionals and consultants in some of the most prestigious firms”. As a further example of LIS engagement in this arena it has been noted by Hyldegaard et al. (2002), that the LIS profession in Denmark is now challenged by an increasing demand for information professionals engaging in activities related to document and knowledge management.

Finally Rehman and Chaudhry (2005) observe that an underestimation of the potential job market was a possible reason for the lack of enthusiasm for KM education in many LIS schools.

2.7.4 New roles and responsibilities

Recognition of the value of information and intellectual capital as key assets of enterprises has led to the creation of new posts for KM practitioners. The significance of this development for the enrichment of information professionals' career roles and responsibilities has been widely acknowledged throughout the literature. Knowledge management, according to Southon and Todd (2001) “Is perceived to offer a substantial enhancement of the role of the information professional”. And again, KM “Seems generally to have contributed to a renewed attention toward the importance of information and knowledge within organizations, and has led to discussions about new roles for the information professional” (Widén-Wulff et al. 2005, P.127).

The recognition of knowledge as vital corporate capital is sufficiently strong to attract the attention of people from a range of disciplines. Hence, “Employers seeking to

recruit staff into senior information and knowledge management roles accept that knowledge managers can come from very diverse backgrounds” (Webb 2002). According to Abell and Oxbrow (2005), in 1987 information roles typically had labels such as librarian, information manager, records manager, researcher or acquisitions manager. However, by 1997 the roles for information specialists were changing and expanding. Consequently as they reported “A whole community of people emerged who consider themselves to be information specialists but whose backgrounds and qualifications did not include information or library science” (Abell, Angela & Oxbrow 2005, P.13).

For librarians however, there is anecdotal evidence throughout the literature that their traditional skills in content and information management make them ideally suited to play a major role in an organisation’s knowledge initiative. Srikantiah and Koenig (2004) identify distinct areas in which LIS professionals can play a key role. Abell and Oxbrow (2001) attribute the earliest recognition of this potential opportunity for information professionals, to Nick Moore’s research (1987), which identified the various roles that information content offered. According to them “Since then the impact of information skills in other roles has been felt, and the range of posts where information skills are applied in creative and imaginative ways have become diverse and increasing” (Abell, Angela & Oxbrow 2001, P.165). They further ensure that “The opportunities for information professionals are expanding, and the need for information skills in key management positions is becoming vital” (Abell, Angela & Oxbrow 2001, P.176).

New roles and responsibilities are emerging for LIS professionals. Rooi and Snyman (2006) for example, refer to the librarians’ functions in facilitating an environment conducive to knowledge sharing, managing the corporate memory, promoting higher link with business processes and core operations, the development of corporate information literacy and management of information in a digital/electronic format. Hawamdeh (2003) observes that the role of knowledge professionals is one of facilitators and communicators. He observes the expansion of LIS territory and adds that information professional’s role need redefinition to deal with all types of knowledge within the organization (Hawamdeh, Suliman 2005).

Librarians have also been recognised as having substantial influence on the development of a knowledge friendly environment in organisations. The potential role of LIS professionals in promoting information literacy for example, is widely acknowledged throughout the literature. For instance, Koenig (2004) investigating the reasons behind the failure of KM initiatives, realised that many of these failures could be attributed to inadequate user training and education, and recommended that companies employ librarians to resolve the problem. Likewise, Sinotte (2004) refers to the urgent need for organisations to outfit their knowledge workers with information literacy capabilities, and highlights this as an opportunity for LIS professionals to implement their expertise in this area. Hawamdeh (2003) also considers information literacy to cover a wide range of skills and competencies normally catered for by library and information science, and sees this as a natural explanation for the fact that many of the KM programs around the world are in LIS departments.

The traditional role of librarians as intermediaries should make them more valuable in KM environments, and facilitate their potential contribution to the development of such environments, for example through the encouragement of knowledge sharing. In this regard, Broadbent (1997), mentioned that “Librarians were generally driven by a desire to provide access to information sources, and they matched this desire with values that assumed information sharing is a good thing, which are critical for the practice of knowledge management”. As Conolly and Matarazzo (1998) observed in the context of a changing library profession and in line with increased recognition of the value of the shared collective knowledge of organisations, it is becoming clear that corporate librarians are now being charged with the mission to explore and implement new and innovative methods to encourage sharing and to better manage information. Referring to a number of cases of successful KM implementation involving a significant contribution from libraries, The Library Association (LA) pointed out the common ground among a new crop of knowledge management programmes. This was based on the central role of information professionals in mapping organisational knowledge resources, and in encouraging a culture shift in knowledge-sharing practice in business centres (LA 1999).

To provide empirical evidence of the role of information professionals in KM programs, Aiyepku (2001) conducted a survey, supported by a number of interviews of information professionals working in Canadian companies. The results of this research revealed a considerable degree of involvement by information professionals in KM programs. Information professionals in knowledge management programs played a key role in a number of areas, including the design of the information architecture, development of the taxonomy, and content management of the organisation's intranet. Other roles included the provision of information for the intranet, gathering competitive intelligence, and providing research services as requested by the knowledge management team.

KM positions as potential openings for LIS professionals have also begun to materialize. Todd and Southon (2000) for example refer to a number of such positions, including those of CKO, Knowledge Manager, and Knowledge and Training Coordinator and certify that these posts demand IM plus related responsibilities. Widén-Wulff et al. (2005) refer to posts such as *Knowledge Champions* and *Knowledge Navigators* as possibilities for librarians and information specialists within the KM-field.

That LIS professionals have roles to play in KM is no longer in serious dispute. However, the degree to which the LIS community has been proactive in preparing for these vacancies is another matter. This is reflected in Koenig's (2005), theory of stages of growth in KM. He argues that whereas librarians could have played a major role in Stage 3 (organisation + retrieval), they missed the opportunity to exploit the demand for expertise in taxonomy. Reardon (1998) also takes the view that "Knowledge management is still a rapidly developing area within which it is essential that the information and library professions realise they have a critical role". However he too observed that some of the most important posts to emerge in knowledge management - Chief Knowledge Officers, Head of Knowledge Management Architecture, Director of Intellectual Asset Management, etc. - were being captured by professionals from management, finance and information technology. This earlier poor performance of LIS professionals to some extent might be attributed to the

inadequacies of their former education and training programs for outfitting graduates with the KM required skills, understandings, attributes, perceptions, and mindset. It could also help to explain why some commentators believe that many knowledge-enabling tasks are best effected by other groups of professionals, with for example, Human Resource Departments seen as being in a much stronger position to bring about the required cultural changes (Ferguson 2004).

Calls for librarians to cross the professional boundaries into KM are abundant. Arguing that there is undoubtedly a valuable role for information professionals in the KM space, Butler (2000) for instance, underlines the Special Library Association's (SLA) call for librarians to shift from being custodians of a document collection to managers of the corporate memory. In the same vein, Rooi and Snyman (2006) assert that the basics of librarianship prepare librarians to become key players in knowledge management activities in the organisation. However, they refer to the need for librarians to move beyond the traditional role of librarianship to *cybrarianship*, that is to take on new roles such as Web Content Manager, Web Page Designer, and Information Architect.

It is clear, that such changes are underway. Koenig and Srikantiah (2002) for example, observed that with the evolution of KM to its third stage, the KM world has begun to discover the importance of the skills and assets associated with librarianship and information science, however under the rubric of *taxonomy* something that sounds both 'sexier' and 'more scientific'. Reporting the results of a pilot programme on the practical application of knowledge management techniques, by librarians, particularly on leveraging tacit knowledge, Rimmer (2004, P.4) asserts that "The knowledge manager role was fairly well accepted among university colleagues as being appropriate for librarians to take on, and in general, the role of the library in implementing knowledge management was accepted as being within its remits to develop information strategy, together with other units". An analysis of knowledge management job advertisements in Britain, revealed that employers seeking KM related positions were starting to recognize the validity of information and library education as a specialist knowledge background (Georgy, Lepik & Petuchovait 2005). Likewise, Hyldegaard et al. (2002, P.149) observed that "An increasing number of LIS graduates from the Royal School of Library and Information Science (RSLIS)

that are employed in the private sector, now obtain employment in companies and organizations where the traditional role of the librarian has evolved into Knowledge or Content Managers, Web and Intranet Designers, System Developers, etc.”.

To sum up, the effect of KM on the career options and prospects for LIS have led to the need for a higher profile for information specialists. This is a further indicator of the relevance of KM to LIS education. In other words, the evolving roles of librarians imply that LIS graduates need to be outfitted with extra capabilities through the application of new educational paradigms and procedures. As organizations across industrial sectors are creating roles for knowledge work, issues of professional education in knowledge management have been much debated over the past decade (Hawamdeh, Suliman 2005). In response, as Sutton (2007) pointed out, “Library and information professionals are trying to reengineer their education to cope with the transformation taking place because of KM initiatives”. And as Webb (2002) observed anecdotal evidence suggests that a professional qualification in KM is of value. For all of the above reasons, LIS schools have sought to be as responsive to the needs of KM education and training as possible.

2.8 Competencies

Competencies encompass knowledge, skills and personal traits. As explained elsewhere in this thesis, the impact of KM particularly, in the job market and mounting employers’ demands for a knowledge-competent workforce, necessitate the enrichment of KM skills among LIS professionals largely by means of professional education. Hence as Rehman and Chaudhry (2005, P.12) observed “We feel that in order to take full advantage of the potential of KM, curricula and teaching in LIS programs should be reviewed with a view to turning traditional information management skills into knowledge management competencies”. To specify the requirements of KM work, and to determine the core elements of training programs, however, the competencies of knowledge professionals should first be identified. Researchers now consider the identification of core KM skills by organizations to be mandatory, indicating that there is growing support for the need for a clear set of skills and competencies for knowledge management to aid in its implementation in

organizations (Amos & Chance 2001; Davenport, TH & Prusak 1998; Hawamdeh, Suliman 2005; Oxbrow 2000). A growing volume of work, therefore, is directed at the identification of the requisite knowledge and skill base for LIS professionals seeking meaningful engagement in knowledge management. LIS and other researchers engaged in the identification of the requisite competencies for knowledge management work have conducted surveys and interviewed knowledge management employers and practitioners and analysed the content of job advertisements. This has engaged the attention of major professional bodies. For instance, “Both the British Library Research and Innovation Centre and the Library and Information Commission [UK] are concerned about the profession’s role in KM, and are sponsoring investigations of skills needs to influence curriculum development for professional education and the continuing professional development of practitioners” (Corrall 1998). Defining the required competencies of knowledge professionals, based on the needs of the market, has been considered a challenging issue for KM education by Hawamdeh et al. (2004). Investigating positions vacant announcements calling for professional level LIS skills, Kennan et al. (2006) noted that a number of LIS schools review their graduates early employment experience in order to collect data useful for the development of curricula, and observed that from the schools’ point of view these ongoing investigations were valuable in developing curricula relevant to the changing LIS workplace.

In reviewing the relevant literature five clear categories of competencies for KM have emerged. These are: professional skills for a commercial context, communication skills, management skills, team-working skills and IT skills.

2.8.1 Major KM competencies

2.8.1.1 Professional skills in the context of commercial organizations

The integration of elements of library and information science, and the appearance of new types of materials, functions and services have already brought new facets to the work of the LIS professions. Nor is this likely to be the end of such changes, with in all likelihood, the demands of the market rendering at least some traditional LIS skills

redundant. This perception is reflected in the following statement from a paper reviewing job advertisements:

“The ads suggest a growing lack of clarity about the skills and competencies of librarians. For example, almost all the ads in 1974 called for skills clearly within the library and information services (LIS) domain, whereas by 2004 only 45 percent asked for established LIS skills” (Kennan, Willard & Wilson 2006).

However, there is support for the view that traditional LIS skills can be applied successfully in new circumstances:

“We believe that if information professionals develop the transferable and business skills to match their professional skills, and devote as much enthusiasm to their organizations as they do to their profession – they are well poised to take the opportunities that the commercial sector offers. The professional and technical skills of LIS graduates need to be applied with much more understanding of the context, about the way they contribute to the business of the organization... An organization expects candidates to have an acceptable level of professional and technical skills... Interpersonal skills and transferable organizational skills – skills and behaviours that enable professional skills to be applied effectively – are key” (Abell, Angela & Wingar 2005).

According to this view, librarians have the ability to make connections – to understand context and thrive in complexity – in the commercial world. Furthermore, these abilities can provide information professionals with the platform they need in order to maximise the application of their skills in the commercial world, and to take advantage of new opportunities. As Abell (2001) stated; “The talent war will benefit those people who can demonstrate a drive to learn a range of experiences and the ability to apply their professional competence for the benefit of their current employer”.

Referring to the need for the application of a high level of information management skills in the effective integration and use of internal information, Abell and Oxbrow (2001, P.162) assert that; “To add value to a knowledge-based environment, a library and information service needs to develop a range of interpersonal and business skills in its staff”. In similar vein, Morris (2001, P.7) observes: “Information professionals already have the essential theoretical and practical skills to provide the information management element of KM. However, there are also opportunities for information professionals to use their skills in creative and imaginative ways to influence

information strategies at boardroom level and corporate decision making”. According to Morris, graduates need to be provided with the right mix of management, business, ICT and information skills, to enable them to take advantage of the emerging roles in the knowledge economy.

Koenig (1999) also highlights the importance of traditional LIS skills in the information environment, with skills in indexing, cataloguing and authority control important to the organizing and structuring of information and knowledge. Equally important are skills in database management and specifically in data-warehouse and data mining.

In a later investigation of the skills and knowledge required of staff by knowledge management employers, Lai (2005), agreed with Koenig that the ideal professional should possess all the traditional core LIS skills, and that these skills had to be transformed and translated into the kind of language that business professionals employ in corporate environments.

Furthermore as pointed out elsewhere (Butler 2000; Southon, G & Todd 2001), information professionals will need to demonstrate their relevance to organizational goals, which will require broad understanding of the organization, its clients and the role of information and knowledge in achieving success. And as other commentators have observed “Librarians thus have the opportunity to play an important role in knowledge management based on their training and experience, developed and used for many years. However, they need to extend and renew these principles and skills and link them with the processes and core operations of the business in order to be successful in knowledge management activities. For this reason, it becomes imperative for librarians to understand the nature of the organization, its processes, clients and the role of information and knowledge” (Rooi & Snyman 2006, P.265) However, to benefit from this knowledge management opportunity, and make themselves more relevant to their organizations, a substantial expansion in thinking and a broadening of their skills will be necessary (Todd, RJ & Southon 2001).

2.8.1.2 Communication skills

Communication skills have long been a requirement for LIS. The advent of virtual environments might at first have suggested the emergence of a backroom, supportive type of role for librarians, one involving less interaction with users. However, this has not happened because, the forces shaping today's new knowledge age, have made the communication of information a must for all organizations and their employees, particularly with the emergence of knowledge management (Materska 2004). In this knowledge management context, calls for attention to the management of tacit knowledge reinforce the importance of the human dimension with its implied focus on relationships and collaboration where communication is the means to connect human minds through interaction.

Analysing American job advertisements over the period 1971-1990, Xu (1996) observed that calls for oral and written communication skills first appeared in the period 1976-1980. This demand for communication skills grew tremendously from 1983 to 2003: "In 1983, only 20.45 % of the announcements [job advertisements] requested this ability, with three-fourths of that total coming from academic positions...In 2003, fully half (50.27%) of all job advertisements explicitly required communication skills with the largest year to year increase in the public sector" (Starr 2004). This continued demand for communication and behavioural skills, in both traditional and non-traditional job markets has also been noted in Kennan et al.'s (2006) analysis of Australian job advertisements. A similar set of skills under the rubric of 'liaison' was paramount in the period 1989-1998 (Heimer 2002).

Lai (2005), analysed the content of job descriptions to identify the kinds of background/skills and personal traits that employers were asking for in a knowledge management candidate. Her findings revealed that 'excellent oral communication' (51.9%) was the most important skill required by employers, with 'writing' and 'project management skills' the next two most in demand. Lai believed that these skills were already present in LIS students. For example, LIS students in general exhibited a better command of speaking and writing compared to students in more-IT related disciplines. Lai attributed this finding to the humanities or social sciences backgrounds of most LIS students.

2.8.1.3 Management skills

The importance of different types of managerial skills such as in project management for the success of knowledge management projects has been affirmed by earlier researchers, for example TFPL (1999). And later in 2000 when a significant overlap between recognized management competencies and those required for successful knowledge practitioners was reported (Abell, Angela 2000). This convergence is also evident in the 'enablers section' of 'The KM standard' published by Standards Australia, October (2005). According to Ferguson and Hider (2006, P.94) "Almost half of the thirty-four enablers listed are drawn from the field of management, which is hardly surprising, given KM's focus on leveraging intellectual assets throughout an organization, fostering innovation and change, and developing organizational culture".

Rowley (1995) identified management development as a prerequisite to the advancement of information professionals to more senior management posts. She called both for library managers to care more about their own personal development, and for organizations to establish appropriate programmes to support the development of management skills in all of their managers. Kinnell (1996), on the other hand emphasised the management role of information professionals, arguing that they needed not only a portfolio of skills but also the ability to critically assess the relevance and value of modern management techniques in order to meet current challenges. For this they needed both a theoretical understanding of, and the ability to apply, the principles of: human resource management, financial management; marketing; operations management; and strategic management. These management skills needed to be augmented by a strong focus on information service management skills as well. The management skills of motivating, coaching, facilitating and influencing, along with strategic and marketing skills have been identified as requirements for knowledge workers (Skyrme, D 1998). Discussing the challenge of finding a suitable knowledge manager, Neilsen (2006) affirms as a key characteristic, the ability to act as an organizational change agent, as acknowledged in the recent Australian Knowledge Management Standard (AS5037-2005). He also points to project management as being the next major hurdle in implementing knowledge

management initiatives, reiterating that managers will need a set of skills encompassing the management of organizational change, project management and project delivery.

2.8.1.4 Team- working skills

Working well with other people is another of the core competencies required of knowledge management practitioners. Since knowledge management is a complex task which necessitates the participation of various professionals, it is imperative for these people to have the ability and the motivation to work in groups, and to cooperate with other professionals in order to achieve the overall goals of the group. This has been described as a key ability by Cooper (1998), and in a more expanded sense, as the ability to work and empathise with others both inside and outside the organization. This once again posits the need for a high level of communication and team working. Employers want people who are adept at, and capable of, working in teams and they especially value people who know how to work with other people. The ability to lead high-performing information, resource or knowledge management project teams has become critical. The specific skills a successful project leader needs may differ from project to project, and from team to team, but they will always include those who best harness the knowledge and potential of the individual members and the team as a whole (Nicoson 2005).

2.8.1.5 IT skills

Although knowledge management involves much more than the use of technology, it relies on the use of IT as an enabler. Consequently, while knowledge workers do not need formal qualifications or deep expertise in IT, they do need to have sufficient understanding and skill- a basic level of literacy- to be able to use these enablers effectively for their own purposes.

To interact with IT staff and managers (e.g. in managing the Intranet), information professionals require a basic understanding of computing and network architectures (Church 2004). The high value of techno-literacy for knowledge management practitioners has been mentioned in other sources including Abell and Oxbrow

(2001), Loughridge (1999), and Feret and Marcinek (1999). However since the pace of technology development continues unabated, LIS professionals need to keep abreast of broad trends because:

“[The] knowledge manager should be able to serve as a facilitator between technology and people; between users and corporate intranets. The nature of a librarian’s work is at advantage in this regard because it is indeed a blend of people and technology” (Lai 2005, P.360).

2.8.2 A wider range of competencies

In a study conducted by Todd and Southon (2001) , identifying the key skills and understandings required for knowledge management, an understanding of and facility in technology emerged as crucial, despite the fact that other factors were afforded primacy over the technology. Based on their findings, the skills and understandings perceived to be central for effective KM fell into specific categories including knowledge, information, people, cognitive issues, organisation and business, management and technology. Five specific categories of understandings were identified, underlying the significance of people and organizational factors over technology:

- Understanding of human knowing (knowledge about knowledge)
- Understanding the knowledge dynamics of people
- Understanding the organization as a knowledge generating and using entity
- Understanding of the fundamental principles of information management
- Understanding technology

On the skills side, six categories were identified, once again clearly emphasising the importance of people and cognitive skills and organizational factors over technology.

- People-centred skills, such as negotiation, sharing, team-working and communication
- Skills associated with aspects of management of the organization as a whole, (management skills)
- Information processing skills
- Cognitive skills

-
- Organization and business skills
 - Information technology skills.

Reporting on the proceedings of 1999 ALA Congress on Professional Education, Prentice (1999), from a long list, highlighted the following as values that need be acknowledged in courses:

- Ability to deal with IT
- Communication skills
- Management skills
- The ability to deal with change

Abell and Oxbrow (2001), similarly, outline typical examples of core competencies in KM environments as: working with others, interpersonal skills, IT skills, planning and organization, business understanding, and being able to contribute to the knowledge base by sharing their leaning and information. Referring to the results of a previous survey of 73 participants from private industry and government agencies in Singapore, Hawamdeh (2005) identified an underpinning set of skill/knowledge for the information professionals. This included,

“A good overall understanding of the business and its organization, creativity in gathering information and creating synergy from the use of information, proactively anticipating and responding to changes in the environment, lifelong learning and exhibiting self learning capabilities, demonstrating self-control and problem-solving skills, promoting a culture of shared information and knowledge, and being knowledgeable and competent in adapting applications” (Hawamdeh, Suliman 2005, P.1202).

This list is by no means exhaustive, In fact, the range of required skills for LIS people in the knowledge age, would need to be more extensive and more complex in order to account for the pervasive nature of knowledge (Lasic- Lazic, Slavic & Zorica 2003). According to Abell and Oxbrow (2001, P.117) “KM enabling competencies encompass a diverse range of activities and experience. They are found in people from equally diverse backgrounds and with a variety of professional and educational circumstances”. The big challenge now is that of encompassing this multiplicity of skills in a single curriculum, in order to ensure that LIS professionals have the

opportunity to develop as far as possible. This has been emphasised by Milne (1999, P.36) maintaining that “The challenge for educators is to incorporate the development of these skills into an academic program of learning”. Also significant is the desired level of functional competency within LIS programs. Davenport (1997) has suggested that at least four levels should be recognised in developing the competency (education and training) structure for employees in a KM-specific environment (See Figure 2.1).

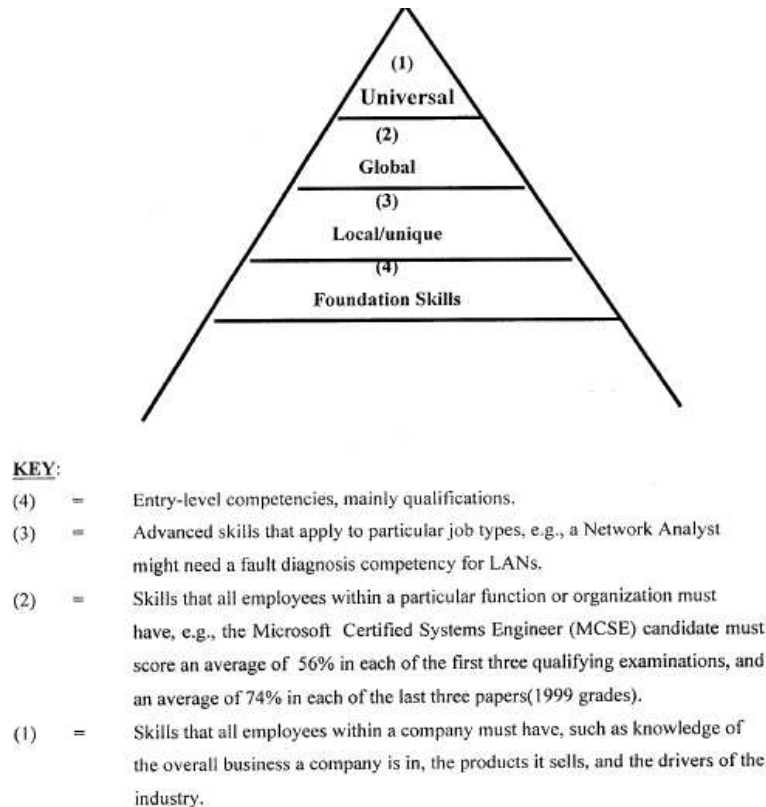


Figure 2.1 Scalable KM-related competencies in enterprises.

Source: (Aiyepoku 2001, P.32)

Therefore, to best approach the task of encompassing this multiplicity of skills in a single curriculum, Todd and Southon (2001) propose that LIS schools recruit candidates who are eager to learn beyond the traditional confines of LIS, and ask educational providers to be flexible in the design of their programs and to develop their pedagogical agenda in a manner that enables students to identify the most critical skills required for their particular prospective positions.

2.9 Curricular Issues

2.9.1 Curricular renovation: a constant need

The changing needs of society and the demands of workplace environments, along with the advancement of knowledge and technology, necessitates systemic educational reforms for every profession. Continuous curricular revision as part of this reform effort is required to prepare learners to adopt and sustain new roles and responsibilities in an uncertain future. As Gokhale (1999, P.5) observed, “The quality of future professionals depends much on having an up-to-date curriculum. It needs to be so oriented that it is able to cope with the rapidly changing needs”. Discussing this in more detail, Lasic-Lazic et al. (2003, P.6), assert that “Curriculum development is linked to general degree objectives, the departmental mission, course delivery and anticipated changes in the field, but is also dependent upon interaction between different course modules and the distribution of the subject area”. Jorgenson (2006) considers the curriculum articulation process to be diagnostic, helping to identify gaps and redundancies in a school’s instructional continuum as well as serving a rejuvenation for faculty. Curricular change is of course, not just the concern of LIS. It is an issue for every field of study, and has been ever present.

Thirty years ago, Shapere (1977), referred to the emergence of increasing connections between knowledge-claims, domain groupings, and descriptions, and highlighted the increasing associations of items over time, along with the development of science. With the disappearance of domain boundaries as he predicted, and recognition of the fact that the domain of information is ever-expanding (Myburgh 2003), LIS schools need to broaden their programs to facilitate the development of critical knowledge and of the creative approaches needed for problem solving in today’s turbulent environment. This according to Myburgh (2003), requires professions such as LIS to gain extra-disciplinary knowledge and to engage in meaningful trans-disciplinary activities. In the field of LIS, professional education has evolved in this fashion over the years. For example, as is clear from the KALIPER² Report (Association for Library and Information Science Education

² KALIPER: The Kellogg-ALISE Information Professions and Education Reform Project

2000), many library schools have extended the scope of their programs beyond the more traditional areas, to address the needs of a broad-based information environment. A key influence on curriculum development has been the field of Information Science, which along with advances in IT has permeated LIS education since the 1990's, leading to the redesign of many LIS courses and curricula. The need for fundamental revision in order to respond to the demands of a dynamic workplace environment, is also reflected in the literature of LIS. For example "As the automated library gave way to the digital or virtual library, educators again had to reassess the content of their curricula to ensure that graduates were equipped to take their place as effective new professionals" (Milne, Patricia 1999, P.31).

With recognition of the added value of knowledge in industry and society today, other commentators have called for a response by LIS educators to ongoing changes in technology and the shift towards a knowledge economy (Milner 1998). And again that "In order to take full advantage of potential of KM, curricula and teaching in LIS programs should be reviewed with a view of turning traditional information management skills into knowledge management competencies" (Rehman & Chaudhry 2005, P.12). Hence, in response to this need, there is the observation within the literature that "Since the mid-1990s, librarian professional associations and the LIS schools have studied the future need for information professionals, the state of LIS curricula now and how curricula should change in the future to meet new needs" (Tenopir 2002).

2.9.2 Curriculum directions (The flavour)

The multi-faceted nature of KM has resulted in its adoption across a spectrum of disciplines, with competing claims to ownership. This is hardly unexpected in view of the importance of knowledge to so many professions. The multidisciplinary character of the subject, along with multiple perspectives on it, have resulted in a wide diversity in the design and implementation of KM programs within LIS education (See for example Chaudhry and Higgins, 2003; Hawamdeh et al, 2004). This perhaps to some extent can be justified by the fact that knowledge management is context-dependent. To demonstrate the case-specific nature of KM solutions, Todd and Southon (2000) argue that the diversity of approaches reported from successful KM initiatives

indicates that generic solutions are unlikely to be successful and that there is a need to evolve approaches to suit each particular situation. Emphasising the intimate relations between knowledge and knowledge processes and the nature of the organization, its function, its culture, its structure and position in the market, Southon et al (2002) argued that these aspects had to be considered when developing models or theoretical frameworks of knowledge management. This recommendation mirrored the view of Amos and Chance (2001, P.51), who observed that “The very nature of knowledge suggests that knowledge management is unique for every organization, and this will consequently be reflected in the future role of the professional”. Accordingly Lank (2004) called for the course designers of the UK Open University (OU) MBA programme, to teach in practice not theory, and encourage people to develop knowledge processes that work for their organisations and the people within them. The flavour of the KM curriculum therefore, will be different from one place to another depending upon the setting or context with, for instance, one perhaps emphasizing a historical framework and others human factors/personnel, software, or industry context (Ruth, Theobald & Frizzell 1999).

The different educational needs of students in each domain is also a justification for such diversity. The need for flexibility in KM education is evident from Todd and Southon’s (2001) assertion that “Institutions which are preparing people for roles in [KM] will need to be very flexible in the way that they act, to best match the needs of the students with the opportunities of the marketplace, and the demands of the specific organisations in which they are working”. As Widén-Wulff et al. (2005, P.122) observed “The unclear framework of the field of KM lies in the fact that it is connected to several other disciplines...It is complicated to define the topic clearly and the contents of the education also vary, depending on which faculty or school the programme is situated within”. Discussing the content of European LIS curricula based on the results of a questionnaire survey, Lorrington (2007) points to KM as a fairly diffuse and ambiguous subject area that may be taught as a field integrated with other subject areas. He further notes that “Course offerings in this field in the various LIS schools include a broad range of very heterogeneous sub-themes, which are more or less taught within the realm of other identified course areas”(Lorrington 2007, P.4) .

Not of course, that such diversity in program content has emerged only with the rise to importance of knowledge management. A lack of consensus on the wider area of the LIS core curriculum has been well documented in the published literature. For example, Koenig (1983) reported disagreement among information specialists, managers and educators about the relative importance of courses and concluded that there was no necessary core in the field. Similarly, White & Paris (1985), found no consensus among practitioners in different types of libraries as to the content of the core curriculum. However, this problem could well turn out to be more acute when it comes to knowledge management education, and the identification of the main elements for inclusion in the LIS curriculum.

In an attempt to identify skills for knowledge working, The British Standards Institution (BSI) consulted over 70 organisations during 2004. One of the main conclusions of this study was that while KM approaches must be organisation-specific, there was some common ground in overall approaches, and popular tools and techniques (Abell, Angela & Wingar 2005). This implies that although the design and implementation of KM programs should be in accordance with the needs of specific cases, there are some common core areas in the KM curriculum. Although to date there are only a few signs of the emergence of a collaborative/coherent holistic approach, even within the parameters of specific disciplines such as LIS, there is growing recognition within the literature that, whatever the educational context, a broadly-based and holistic approach is essential, and for that an amalgamation of subject areas with an appropriate level of concentration is required (Todd, RJ & Southon 2001). To find the right level of focus is of course, a challenging issue. The breadth of what should be incorporated into KM has been identified by Koenig (1999) as a challenging issue in the design of KM educational programs. The difficulty of determining the intellectual territory to be covered by any viable and practical KM course has been mentioned by Brogan et al. (2001) as a factor that has caused educators to see KM as an unbounded universe and just too hard, with the consequence that very few universities offer courses in this discipline area.

On reviewing KM-related courses, another major problem highlighted within the literature is that of confusion between *information management* and *knowledge management*, which has sometimes led to the use of the terms interchangeably. Sutton

and his colleagues (2002) point out that course material for KM programs is based upon an ambiguous framework of information that is ubiquitous, vague, and sometimes a repackaging of existing discipline material. They consider this to be a fundamental issue of KM education that needs further investigation. According to Todd and Southon (2001, P.315) “In the published literature, there is a sense that knowledge management is not the same as information management, and while there are understandings and skills that appear to overlap, the implication is that the formal education and training programs for knowledge management need to be responsive to this”. The need to make a clear distinction between KM and IM within the LIS discipline has also been stressed by Hawamdeh (2005, P.1201):

“It is clear that there are significant overlaps, in the theories relating to the information and knowledge domains. It is important to understand these overlaps and distinguish the differences that will help in developing a new and relevant knowledge management curriculum, rather than just re-naming the existing information management programs”.

This ambiguity of course, may have originated from, the world of practice in KM and because in many instances, enterprises or consultants attach the KM label to their IM functions. As Dunn and Hackney (2000, P.270) noted “A consideration of what is being presented as KM notes its remarkable similarity to the traditional features of IM redressed in appearance, but perhaps not the ideal starting point to get us to the desired destination”. The authors identify this as a critical issue for KM education, adding that “KM issues remain largely ambiguous or misunderstood with different organisational responses in evidence. Practice is as varied as organisations’ definitions” (Dunn & Hackney 2000, P.273). Adapting the work of Prusak (2000), they identified four types of KM activities and argued that these generic strategies would be applicable in the teaching of KM. They further emphasised that “By segmenting the KM issue against differing strategic intentions our curricula might develop a clearer perspective on the real contribution of KM” (Dunn & Hackney 2000, P.274). Their specified KM activities were as follows:

- 1- Knowledge replication: which is concerned with conducting operations in precisely the same way within organizations, such as hotel or restaurant chains, wherever they are located world wide.

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- 2- Knowledge diffusion or leveragability: which is the most prevalent KM practice, and is about knowing what we know, and using it.
 - 3- Knowledge innovation: which is concerned with predicting what comes next; eg new products or services.
 - 4- Knowledge commercialisation: which is about knowing what the organisation can sell, i.e. consultancy, products and services.

2.9.3 Curriculum content (The ingredients)

KM education differs widely in structure and content from one place to another. Course offerings in the field, even within discrete areas such as Library and Information Science (LIS), comprise a broad range of very divergent subject matters. Reported research on the current status of KM courses in the literature, complemented with a brief examination of LIS school websites, reveals a range of KM-related subjects at different levels and with multiple labels.

In an overview of what were considered the core contents of KM education in Europe, Widén-Wulff et al. (2005), report the conduct of a content analysis of KM modules at 10 European LIS schools, as well as of units in business schools and technical universities. This exercise generated 64 different topics with almost no overlap between the programs examined. The topics identified in their study embraced many perspectives, ranging from intellectual capital, learning organizations, knowledge strategies and techniques, to expert systems, intranets and extranets, and database design. This degree of diversity, according to the authors, represents the problematic situation of finding a coherent understanding of the KM field and has led to claims such as that “KM is covering nearly everything or nothing” (Lorrington 2007, P.7). The topics emerging from Widen-Wulff et al.’s study have been classified into five meta-categories including: contents, context, process, people, and information technology (Figure 2.2).

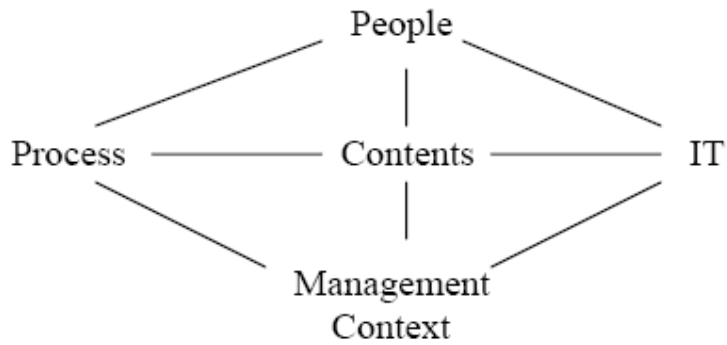


Figure 2.2 Meta categories of topics included in IM and KM modules.

Source: (Widén-Wulff et al. 2005, P.125)

They further clarified these meta-categories for KM as follows:

- Contents: core competence
- Context: aspects of organisational culture and strategies
- Process: with activities more often connected to people like learning and techniques
- People: including individual aspects, groups and networks
- IT: systems, databanks, rules, portals

Reporting the results of several research projects, including an analysis of the syllabi of other information studies schools, to inform curriculum development at the Department of Information Sciences at the Faculty of Philosophy, University of Zagreb, Lasic-Lazic et al. (2003, P.5) identified KM as a topic in the area of knowledge organisation and observed that “The courses in the field of knowledge organisation taught in the information study schools are characterised by a great difference in granularity and scope”. The authors further added that “The number of topics, as well as the depth to which they are presented is also very different”.

In a comparative study of KM educational programs KM worldwide, Koch (2002), identified such programs in about 20 educational institutions, and found difficulty in comparing their content in view of the different levels and modes of offer.

In a study of KM education in Australia, Ferguson and Hider (2006), compared the content of KM courses in 7 Australian universities to identify overlap and similarities in course curricula. For this purpose, they used the abstracts of subjects listed on the WebPages of the courses. They deemed it unlikely that courses at two different universities would comprise exactly the same subjects, in terms of content. And even if the overall content in the courses was the same (very unlikely), the content could well be divided into subjects in different ways. However, they assumed that despite varying specificity and detail in the abstracts, and variation in subject divisions, there would be some subject equivalency across courses, particularly if subject equivalency was defined in terms of approximation, rather than perfect symmetry. They concluded that there was a core subject equivalency of just under 50% (1.87/4) amongst Masters courses, which in their words represented a reasonable, but not a high level of overlap.

Core subjects identified in most of these courses were: KM principles/theory, KM technologies, KM processes, KM in organisations, and Information organisation/content management. These subjects featured within a range of broad subject areas including: organisation and management, technological applications, information organisation and retrieval, business (especially e-business), and the sociology of knowledge and learning.

These categories were fairly similar to the five broad areas identified by Chaudhry and Higgins (2004), with the only substantial difference being the absence here of specific technologies and processes, such as intranets, portals, knowledge mapping and knowledge repositories.

Elsewhere, the literature reveals divergent recommendations for the content of KM curricula. Reardon (1998) was probably one of the first people to propose a set of elements for developing knowledge management courses. His proposed areas for inclusion, are repeated here in descending order of importance:

- Behavioural studies
- Knowledge studies
- Transferable skills

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- Research skills
 - Information Management
 - Management
 - Communications technology
 - Electronic resources
 - Information technology

Interestingly these recommendations are reflected in the findings of a survey conducted as part of this current doctoral thesis (See Chapter 8), for example with regard to Knowledge and Behavioural studies and ICT. Reardon (1998) insisted on “The inclusion of sound theoretical elements that focus, for example, on the nature of knowledge and on the behavioural aspects of knowledge development, acquisition, communication and use”. Further “It may even be appropriate to include study of the generation of knowledge as a prime product of innovation and as a by-product of adaptive learning”. Reardon (1998) believed that inclusion of these elements would make clear that knowledge management focuses on people as generators of knowledge at least as much as users of information.

Referring to some examples of KM programs, mainly at business and economic schools at different universities, Ruth et al. (2003) identified five main foci: management, organisational learning, information technology, library and information sciences and innovative approaches to knowledge diffusion.

Todd and Southon (2001) sought to identify perceptions of underlying understanding and skills for knowledge management among a sample of 56 non-randomly selected LIS professionals with the average 16.5 years of experience in the library and information sector in Australia. The skills and understandings perceived to be central for effective KM, fell into specific categories including, knowledge, information, people, cognitive issues, organisation and business, management and technology. While emphasising the need for flexibility and affirming that “Institutions which are preparing people for roles in [KM] will need to be very flexible in the way that they act to best match the needs of the students with the opportunities of the marketplace, and the demands of the specific organisations in which they are working” (Todd, RJ

& Southon 2001, P.11), the authors recommended that education and training for knowledge management include: diverse knowledge management perspectives, information management, knowledge representation, knowledge creation, the knowledge organisation, technology, and change.

Elsewhere within the literature, it has been emphasised that curriculum development for KM must be relevant to the needs of the market, and be informed by market research (See for example Tang, 1999). Brogan and his colleagues at Edith Cowan University in Perth (2001, P.4) have also pointed out this feature of KM studies, arguing that “Given the fluidity of boundaries associated with KM, the wise course designer will flesh out the remainder of the curriculum via market research aimed at assessing demand and market preferences in course content”. In seeking an optimum design for a KM course, the authors held focus group sessions with academics and industry practitioners, and implemented a survey instrument among information and computing professionals. Based on their findings, the authors asserted that the study of Knowledge Computing (which is about the construction of KM systems) must be a given in any valid knowledge management program of study. They also reported the strong preference of their participants for the inclusion of knowledge management foundations (including knowledge taxonomies, knowledge maps, intellectual capital, and KM roles) and knowledge management practice (including organisational behaviour, change management, project management and teams) in KM educational programs. As regards Information Science subjects, strong support emerged for Electronic Document Management & Recordkeeping, and also for Information Service Management. The authors also emphasised the importance of elements of Electronic Commerce, while arguing that some Information Science subjects such as Information Organisation and Information Retrieval might not be appealing to the marketplace.

Arguing that the crucial question in preparing a KM course is the intellectual territory that can be covered, Ruth and his colleagues recommended eight modules, including; Knowledge Creation, History of KM Theory/Concepts, The Importance of Trust, Knowledge Coding, and Hardware/ Software/Systems, and KM ROI/Evaluation. According to circumstances, these core modules could be mixed and matched in a variety of approaches such as: Current Industry Practice, KM History, Concepts and

Theory, Human/Personnel Factors, and Hardware, Software, and systems (Ruth, Theobald & Frizzell 1999). Among the modules introduced here, Knowledge Coding is clearly relevant to the LIS field. It is worth noting that this module has been considered as core in three of the proposed approaches, except in courses dealing with KM History/Concepts/Theory. In the field of business however, Lank (2004) outlined the key themes of the first MBA module in 'Managing knowledge' at the UK Open University launched in 1999 as follows:

- The nature of knowledge;
- Defining knowledge work;
- Knowledge creation, sharing, combination and application;
- Innovation;
- Knowledge as a strategic resource;
- Collaborative technologies;
- Communication processes, including cross-cultural communication;
- Intellectual capital and intangible assets;
- Intellectual-property rights;
- Organisational learning.

Based on a much wider spectrum that included business, computing and information schools, a review of the content of KM courses in Australia, Canada, Singapore, the UK and the USA, Chaudhry and Higgins (2004) revealed that although the course titles were different in various programs, the following topics tended to be present across the spectrum:

- Concepts related to knowledge
- Tools to exploit the potential of knowledge
- Strategies employed by organisations to manage knowledge
- Support systems needed to sustain KM initiatives

They grouped frequently listed topics into five main curriculum areas including:

-
- Foundations: With relevant topics like definitions and complexity of knowledge, forms of knowledge, sources of knowledge, knowledge workers, intellectual capital, and knowledge-based organisations, KM process, KM enablers and knowledge sharing models.
 - Technology: With topics including, general overview of commonly used technologies, selection and design considerations for KM enabling technologies, KM architecture, KM tools and applications, collaboration, business intelligence, document management systems, intranets, portals, and websites.
 - Process: Including topics like knowledge audit, capture and acquisition of knowledge, knowledge mapping, organisation and categorisation of knowledge resources, developing and maintaining knowledge repositories, search and retrieval, and use and re-use of knowledge.
 - Applications: Including case studies and success stories of KM implementation in consulting firms and IT companies, considerations for KM applications in different sectors and industries, and implementing a KM project in an organisation.
 - Strategies: With topics like integrating knowledge into organisational work, steps for sustaining KM works institutionalization of KM activities, human resources and support and measurement of knowledge assets.

Reviewing these course descriptions in a previous paper, the authors identified differences in emphasis in teaching KM courses in each discipline, arguing that differences in perspectives of KM had influenced the curriculum design in different departments. According to Chaudhry and Higgins (2001) in business management schools, the KM curriculum appears to focus more on topics such as the knowledge based organisation. However, KM courses in information schools incline more towards information organisation and management, whereas those in computing schools mostly focus on enabling tools and technologies for knowledge management.

In conclusion, it is important to remember that KM education is still very young and that its curriculum is still evolving. While some subjects would be discipline-specific or context-dependent, there are also areas of commonality. Therefore, it is difficult to arrive at a consensus on what is fundamental for a generic KM education program

while strengthening this by imports from relevant disciplines, and also placing some emphasis on case-specific areas probably in the form of specialisations. As Ruth et al. (1999, P.284) have anticipated “Eventually, a set of formal elements for KM courses will be developed and professional bodies will agree on them. However, until there is agreement and dissemination, interim approaches are needed”.

2.10 Interdisciplinarity

2.10.1 The interdisciplinary nature of the two fields

As is clear from the literature, the shift in market demands offering LIS graduates an opportunity to apply their knowledge and skills well beyond traditional library or information settings has led to the broadening of LIS programs and as a result, to a movement towards interdisciplinary initiatives. Logan and Hsieh-Yee (2001), reviewing trends in library science education in the 1990's, refer to the increased interdisciplinarity of the LIS discipline in terms of departmental mergers, joint faculty appointments and hires from fields outside the traditional LIS field, in response to changing market demand for LIS graduates and the need for broadening the scope of programs, with implications for the types of programs on offer and the content of LIS curricula. Detecting the rise of these mergers in perennial discussions since the 1980's, Logan and Hsieh-Yee (2001) have identified a trend in the exploration of cross-disciplinary education in LIS. A notable example of the interdisciplinary approach is that of Syracuse University in the United States, where they draw upon the fields of communication, computer science, information science, and library science (Logan & Hsieh-Yee 2001).

The interdisciplinary character of LIS programs would appear to pre-date such examples, with claims that “The theory and practice of our discipline and profession respectively derive strength and sustenance from a rich, cross-disciplinary heritage” (Aiyepoku 2001, P.29). Not that everyone in the field believes in the value of interdisciplinarity as: “ While the outlooks of various fields may be bringing a richness and multi-disciplinary outlook to LIS there is also the danger of this diversity encouraging perceptions that LIS does not have a knowledge base of its own”

(Willard & Wilson 2004). On the other hand, realizing the opportunities that the commercial sector offers to LIS professionals, Abell and Wingar (2005) argue that “Perhaps the time has come to develop an approach which protects the body of knowledge that makes up library and information science while also aligning it with business-focused disciplines”.

Adoption of an interdisciplinary approach in teaching academic courses, while a feature of KM and LIS in for instance the area of digital libraries is evident in other domains (Coleman 2002). Within education for politics and management for example, an interdisciplinary approach has emerged in courses in ‘e-Government’ (Parycek & Pircher 2003). Implementation of this approach in teaching was deemed as relatively simple in the post-graduate sector, where students already possessed a sound knowledge of a given area, and could also “Guarantee the factors necessary for modern research and teaching, as well as the ability to quickly adapt to changes” (Parycek & Pircher 2003, P.3). Interdisciplinarity has also been recognised as a characteristic of LIS research where “As an interdisciplinary field, LIS takes advantage of methodological protocols (e.g., qualitative research techniques) developed in other disciplines” (Carlin 2003, P.1). Likewise interdisciplinarity has been identified as a feature of Information Management (IM); in Fairer-Wessels (1999) proposing the creation of an integrated approach, with the co-existence of multi-, inter-, and transdisciplinary approaches to IM education within the LIS field. She argued that this interdisciplinary approach allows flexibility for students to move around within the various related disciplines, and nurture the acquisition of a wider perspective on their fields of interest.

This interdisciplinary setting is perhaps even more necessary when it comes to KM, which as a holistic, multidimensional field has roots among a range of disciplines. There is considerable variation in perception of the concepts associated with the term, the scope of the field and the contribution that might come from various discipline areas. At its most basic level, KM is regarded by many in the field as a combination of people, processes and technology. One leading authority, Sveiby (1996), views KM as a cross-disciplinary profession with an ‘IT-track’ and a ‘people-track’. According to Sveiby researchers and practitioners in the IT-track consider knowledge as an object, while those in the people-track equate it with a process. These perspectives, as

Hawamdeh (2003, P.169) observed “Do not converge into a very tidy view of the essence of KM, but clearly illustrate the importance of management science (especially human resource management and organisational theory) and IT to KM ”. This has been further clarified by Chen et al. (2002), where they point out that people in the IT-track usually have a computer or information science background, with a specialty in information management. By the same token, those in the people-track tend to have been educated in philosophy, psychology, sociology, or business management and frequently in human resources management. Therefore, the latter emphasise organisational theories at the organisational level, and facilitate knowledge sharing at the individual level (See Table 2.1).

Table 2.1 Approaches to KM activities.

Knowledge Management		
Track \ Level	IT-Track (Knowledge = Object)	People-Track (Knowledge = Process)
Organisational	'Re-engineers'	'Organisation Theorists'
Individual	'AI-specialists' 'E-specialists'	'Psychologists'

Source: (Sveiby, KE 1996)

Davenport and Cronin (2000), however, provide a KM framework based on the juxtaposition of three domains. They refer to KM as a form of 'semantic drift' of information management in the world of LIS (labelled as KM1), then explain it from the context of business processes, as the management of 'know-how' (labelled as KM2) and finally, confirm it as a major 'conceptual shift' based on the perception of knowledge as a capability, rather than as a resource (labelled as KM3). The variety of perspectives of KM has been considered as an indicator of the interdisciplinary nature of the field by previous commentators (Chen, Chie & Fan 2002; Hawamdeh, Suliman 2003). Chen et al. (2002) attribute these variations of perspectives to the different educational backgrounds of the groups involved, and argue that they should all complement rather than exclude one another, because all of them represent different facets of KM.

Viewing this issue from the world of management consultancy, Wigg (1999), on the other hand, concluded that KM would draw upon support from many theoretical and methodological areas including Management, Business and Economics, Cognitive Sciences, Social Sciences, Ergonomics, Cybrary Sciences, Information Sciences, Knowledge Engineering and IT. Underlining the contribution that might come from each of these discipline areas, Wigg introduced the concept of 'Cybrary Sciences' as a blend of expertise from Library Science and Cyberspace bringing knowledge-related services to everyone through its emphasis on obtaining and organising both information and knowledge.

With regard to the preparation of students for careers in Business, Economics, Public Policy and Computer Science Ruth et al. (1999) recommended that institutions should

seriously consider the introduction of interdisciplinary programs in KM, integrating areas such as anthropology, business, information technology, and, possibly, psychology.

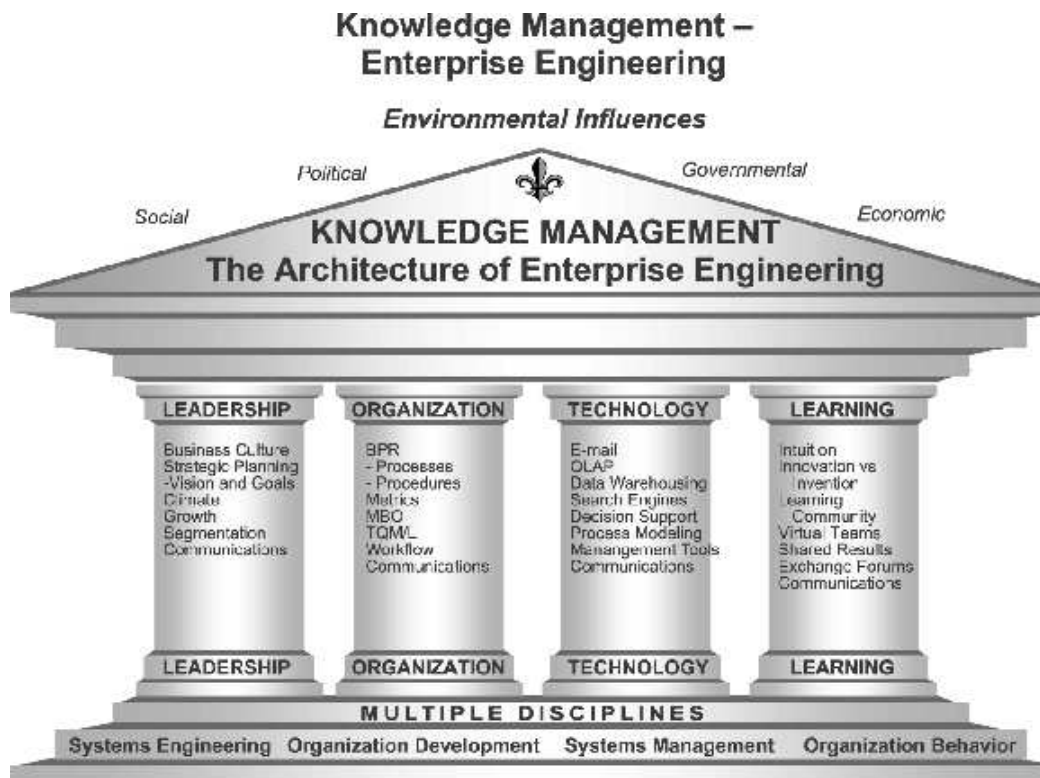
To establish the theoretical basis for a KM degree program at George Washington University, Stankosky and his associates at the George Washington University Institute of Knowledge Management (2005), synthesised scholarly works and published practices in KM, and identified over 40 areas where KM had an impact (Figure 2.3). They further distinguished four principal areas or groupings as the main enterprise engineering pillars or DNA of KM. All the elements of KM fell under these pillars including: Leadership/ Management, Organisation, Technology, and Learning (Figure 2.4). They argued that, for course development and content creation, all four pillars must be addressed. The key elements, disciplines, and contents of each of the pillars identified by this research group are depicted in Table 2.2. Stankosky further used the analogy of the four pillars to that of the juggler, where these four pillars, like the balls that jugglers keep in the air, must all continuously stay in play. He argued that the level of focus on each of these groups would shift, due to the demands of the moment, or the stage in their life cycle, but none of them could be dropped.

Knowledge Management— Multidiscipline

- | | |
|---|--|
| ❖ Systems Theory | ❖ Communications Theory |
| ❖ Risk Management Assessment | ❖ Organizational Psychology |
| ❖ Intelligent Agents | ❖ Visualization |
| ❖ Management of R&D | ❖ Groupware |
| ❖ Decision Support Systems | ❖ Virtual Networks |
| ❖ Modeling and Simulation | ❖ Strategic Planning |
| ❖ Data Mining / Data Warehousing | ❖ Management-by-Objectives |
| ❖ Enterprise Resource Planning | ❖ Total Quality Management |
| ❖ Business Process Engineering | ❖ Management Theory |
| ❖ Systems Analysis | ❖ Management of Information Systems |
| ❖ Systems Engineering | ❖ Database Design / Database
Management Systems |
| ❖ Leadership | ❖ Data Communications and Networks |
| ❖ Ethics | |

Figure 2.3 List of KM study impact areas.

Source: Stankosky (2005, P.4)



Stankosky/ Calabrese/Baldanza, 1999

Figure 2.4 KM framework: The four pillars of knowledge management.

Source: Stankosky (2005, P.6)

Table 2.2 Disciplines/content per key element/ representative key sub-elements.

Source: Calabrese(2000)

Key elements and disciplines	Representative key sub-elements
<i>Technology/tools</i>	Data warehousing
<i>Disciplines</i>	Database management SW
Computer Science	Multi-media repositories
Computational linguistics	GroupWare
Operations research	Decision support systems
Electrical engineering	Expert systems corporate intranet
Math/statistics logic	Speech understanding
	Business modeling systems
	Intelligent agents
	Neural networks, etc.
<i>Organisation/culture</i>	Process workflows
<i>Disciplines</i>	Operating procedures for knowledge sharing
Psychology	Business process reengineering (BPR)
Operations research	Management by objectives (MBO)
Organizational development	Total quality management (TQM)
Philosophy	Metric standards
Sociolinguistics	Hierarchical, centralized or decentralized
	Matrix type organization
	Open/sharing
	Closed/power based
<i>Leadership/management</i>	Internal partnering vs competing type culture
<i>Disciplines</i>	Strategic planning
Operations research	Vision sharing
Management science	Specific and general goals and objectives
Psychology	Executive commitment
Philosophy	KM programs tied to metrics
Logic	Formal KM roles in existence
Linguistics	Tangible rewards for use of KM
Management information systems	Knowledge sharing
Behavioral profiling	
<i>Learning enterprise</i>	Tacit and explicit knowledge
<i>Disciplines</i>	Management support for continuous learning
Cognitive psychology	Capturing, organizing and disseminating knowledge
Organizational development	Virtual teams
Systems engineering	Exchange forums
Management philosophy	Communities of practice
Personal mastery	Innovation encouraged/recognized/rewarded
Mental models	

Investigating the interdisciplinary approach to KM education within LIS, Sutton (2007) claimed that if KM was interdisciplinary, then it should draw upon a suite of other topics, fields, and disciplines in order to activate its value to the organization. These included:

- Artificial Intelligence, Expert Systems, and Knowledge Engineering;
- Business, Commerce, and Management;
- Business Intelligence/Competitive Intelligence;
- Business Process Management and Re-engineering;
- Complexity Science and Chaos Theory;
- Communications and Journalism;
- Computer Science;
- Cybernetics;

-
- Data Warehousing and Data Mining;
 - Ecology;
 - Economics;
 - Entrepreneurship and Innovation;
 - Health Informatics;
 - Organization Studies;
 - Organizational Behaviour;
 - Organizational Communications;
 - Organizational Design;
 - Organizational Memory;
 - Organizational Learning;
 - Organizational Theory;
 - Information Technology and Telecommunications;
 - Leadership;
 - Library and Information Science;
 - Management Information Systems/Information Systems;
 - Marketing;
 - Strategic Management; and
 - Systems Thinking and Theory.

Hawamdeh's (2003) value-investment diagram also illustrates the disciplines associated with KM activities (Figure 2.5). It shows that the four major components of knowledge management are infrastructure, content management, information and knowledge sharing, and the utilization of the information and knowledge acquired by the organization. The author introduces the disciplines associated with each component as follows:

Infrastructure that includes hardware, software, and networking is associated with IT. Content and information acquisition and management are associated with information science. Information and knowledge sharing is associated with communication and cognitive science. Utilization of information and knowledge are associated with business and management (Hawamdeh, Suliman 2003, P.168).

He considers the first two steps of the pyramid as comprising information management, and asserts that KM goes beyond these steps and includes the sharing and utilization of information and knowledge acquired by the organization. Accepting this articulation and the view that the LIS profession has been broadly aligned with information management, the conclusion is that LIS education needs additional input, particularly in the two top stages of this pyramid.

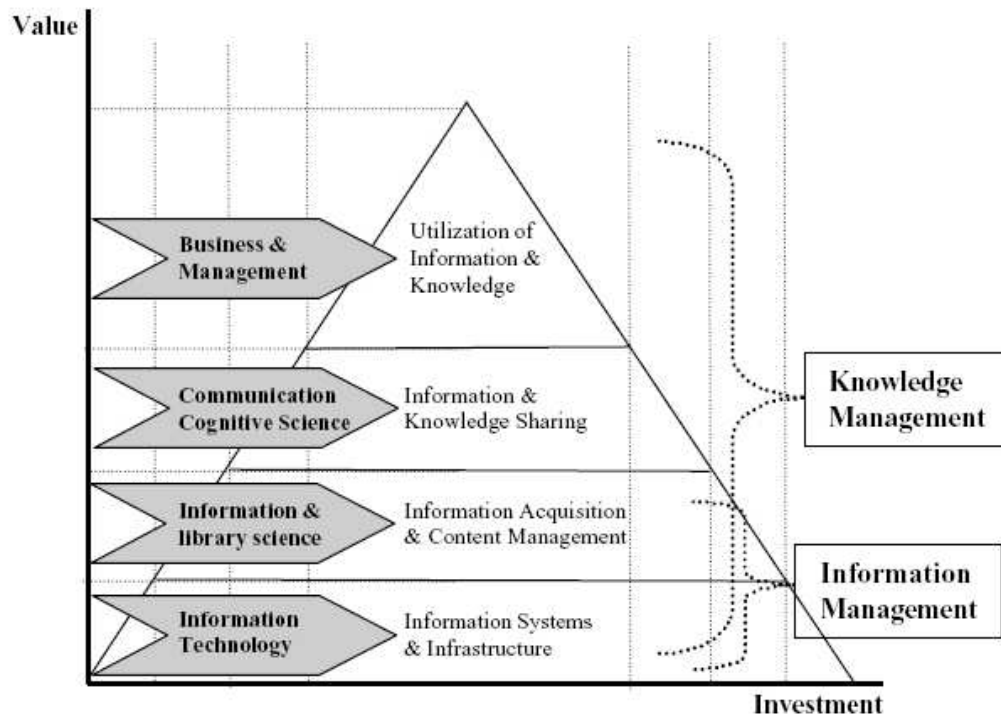


Figure 2.5 Disciplines associated with knowledge management (KM) activities.

Source: Hawamdeh (2003, P.168).

The main point here is that this diversity of themes and topics in KM demonstrates its multidisciplinary nature, and with this the need for integrated and comprehensive KM educational programs. This is similar to Lank's (2004) assessment of the importance of promoting knowledge-consciousness among managers, with KM course designers at The Open University Business School in The UK, finding that many of their ideas had emerged from other disciplines. Also examining the recruitment literature for KM positions Hill (1998) quotes a lecturer in the field as saying, "A course in KM ... might need to be a judicious mix of subject matter drawn from information science, information systems, industrial sociology and psychology ... We have not yet gathered the strength to surmount the conceptual barriers which one encounters between these

disciplines, in order to promote a new named degree in KM ". Hence as Lai (2005) pointed out, in a multi-disciplinary subject like KM, contributions from different academic units can add specific strengths to the course as a whole.

Furthermore, the multiplicity of skills and the wide range of competencies needed for KM are considered as an indication of the multidisciplinary nature of KM education by many in the field. According to Ferguson and Hider (2006, P.90) "A glance at the long list of 'KM enablers' in the new Australian Standard, drawn as they are from IM (in its various guises), HR, and Information Systems and Technology, demonstrates the inter-disciplinary nature of KM". Looking at a number of studies in this area, Chaudhry and Higgins (2003) also referred to the diversity of skills identified for LIS professionals, and concluded that this required a multidisciplinary approach to impart education in support of KM roles. This exigency has also been stressed by Hawamdeh (2005, P.1206) where he states that "The complexity associated with managing knowledge and the types of skills and competencies knowledge professionals must acquire, make it difficult for a single discipline to deliver an effective training program in knowledge management". Referring to the diversity of enabling skills for KM based on the results of a TFPL research project called "Underpinning skills for knowledge management", Chen et al. (2002) also asserted the need for a cross-disciplinary KM curriculum, with input from the Business Administration, Computer Science, and Library and Information Science fields. ³

Clearly, KM is a team-based field which requires the involvement of a range of professionals from a number of disciplines. Numerous groups of professionals are involved with knowledge or information issues in their discipline, and see themselves relevant to the management of knowledge and its related activities. Stressing the need for the implementation of KM initiatives by multidisciplinary teams, Sinotte (2004, P.193) argued that "So far though, the various disciplines involved, information technology, human resources and LIS professionals have only begun to acknowledge that this very critical but complex organizational asset will not be effectively managed without integrated teams and approaches". This feature of KM practice was also

³Discussion of the types of skills and understating required for LIS professionals have been presented under a separate heading within this literature review.

addressed by Chaudhry and Higgins (2003) who in pointing out that KM was a complex and multidimensional concept that requires diverse insights, alerted information professionals to the fact that a partial understanding of KM by different domains might result in an overemphasis on different aspects of knowledge management. It was precisely this feature of knowledge management that led Abell and Oxbrow (2005) to suggest partnership working and skills development for LIS professionals. They saw the potential realisation of opportunities in KM by those information specialists who could develop the capacity, capability and taste for working in partnerships. Emphasising the need for a range of professional skills from different disciplines, in the form of interdisciplinary teams, for the successful implementation of KM, Chen et al. (2002, P.93) argued that “ Team members from different disciplines should have a basic understanding of other KM-related fields so they can use the same language to communicate and achieve the goal of KM project”. To achieve this, the authors proposed “A cross-disciplinary KM curriculum program in the hope that the future KM professionals will be able to take a holistic view of KM”. The need for development of a holistic perspective on KM within LIS education, is also clear in Todd and Southon’s (2001, P.322) observation that “Librarians need to develop their role in co-operation with other professionals (IT, HR, strategic management, customer relations) rather than competing in promoting their distinctive perspectives”. As Ferguson (2004, P.5) noted “It is important, nonetheless, that we see ourselves as merely part of the so-called KM solutions and familiarise ourselves with the other players and potential collaborators”.

All in all, as reflected in research by Rehman and Chaudhry (2005), and in the wider literature, inter-disciplinary settings are likely to provide a better context for academic programs in the area of knowledge management. While there is evidence that KM programs in different departments have taken disparate approaches, and that the content of curricula have been influenced by differences in provider perspectives (See for example Hawamdeh et al., 2004; Chaudhry and Higgins, 2001; Saito, 2007), for KM education to flourish a substantial degree of integration is required. This will entail the integration of different conceptual approaches, while affirming that determining the appropriate level of involvement from associated disciplines, creating consensus among them and catering such integration is a challenging issue for KM education (Loon & Hawamdeh 2002).

2.11 Collaboration

2.11.1 The need for collaboration in KM education

“The clichés ‘unity is strength’, ‘two heads are better than one and ‘divided we fall, united we stand’ suggest the need for cooperation [in library education] ” (Kigongo-Bukenya 2004, P.1). The levels of interaction or involvement between cooperating parties will differ and for example can be perceived variously as cooperation, coordination or collaboration. Although these three concepts have largely been treated as synonymous within the literature, according to Andrea Youngdahl (1998) and Hawkins (2000), they are not the same. Hence, cooperation is regarded as an informal - often superficial - level of interaction. It involves information sharing, serving on committees together, and yet allowing the participants to fundamentally stay separate, and to continue to function in a completely autonomous manner. Coordination denotes a more mutual level of commitment, and involves actual resource sharing, filling in the gaps that the participants would not be able to accommodate individually, and adapting and accommodating differences in order to achieve a goal.

Finally, collaboration involves a synergistic - not an additive – solution. This collaborative model requires the actual commitment and investment of resources, based on a shared vision. Collaboration in this sense is not competitive, but rather a new formulation that creates a new community (Youngdahl 1998). Hawkins emphasises that it is precisely this level of interaction that institutions of higher education need to adopt if they are to be viable in the future, and reiterates that it should be used in addressing some of the critical problems facing libraries (Hawkins 2000). The shared vision and community support that distinguish this collaborative model is actually what knowledge management requires. Indeed, the emergence of ‘communities and collaboration’ as a KM theme within the business community has been clearly recognized by Koenig (1999), and one which has implications for knowledge management education as well.

Recognition of the need for collaborative efforts in LIS education is not altogether new. Kigongo-Bukenya (2004, P.2), observes that “Cooperation in Library and Information education has been a topical issue of concern for quite a long time among the policy makers, educators, researchers, students and users”. Looking back at the history of LIS education, as mentioned in Logan and Hsieh-Yee (2001), the changes in university climate in the 1990’s have caused LIS schools to take a more proactive position toward consolidation with other campus units in order to obtain a greater university presence and perhaps additional funding and led to the formation of collaborative arrangements for associated programs. The authors regarded the application of this new educational cooperation as a means for LIS schools to help broaden the appeal of LIS education to a wider audience. Furthermore, they perceived the shift toward the information economy as a catalyst for creating cooperative partnerships for funding and internships, and for forming collaborative bonds with other units on campus. They claimed that LIS schools had seized on the developments in technology as constituting new ways of connecting and collaborating, and that they had responded to these changes with program initiatives and unique collaborative arrangements. Elsewhere within the literature, joint discussions on the structure and content of the LIS curriculum have formed part of the EUCILD Project, investigating ways of strengthening LIS education programs in Europe (Chaudhry, AS 2007). Chaudhry also monitored the introduction of collaborative projects aimed at enhancing the quality of LIS education programs in the Southeast Asian region, through the development of regional ‘schemes of accreditation’ and the sharing of teaching materials by building repositories of learning objects.

In the area of IM education (which embraces KM in many cases), Widén-Wulff et al. (2005) have perceived many opportunities for cooperation and networking within LIS. They outlined subjects and topics for cooperation as follows:

1. LIS and business academies (common research projects, patenting – intellectual capital, intellectual property management, and competitive intelligence);
2. LIS academies and government (knowledge-based society, learning society, intellectual property management);

-
3. LIS academies and government and business (e.g. industrial technological clusters, R&D activities for industrial spheres, competitive advantage strategies and tactics);
 4. LIS academies and professional organizations (Special Libraries Association–European Chapter, IFLA, SCIP – Society of Competitive Intelligence Professionals, ASIS&T, etc.);
 5. Exchange programmes in LIS (collaboration with other LIS schools);
 6. Didactics of teaching IM;
 7. Coordination with national/ international practical projects (practice in companies and institutions with interests in IM areas);
 8. Comparison of the curriculum of LIS schools, business schools and industry oriented schools.

As for the benefits of cooperation, Kigongo-Bukenya (2004) refers to cross-fertilization of expertise and experience, and the increase in efficiency and effectiveness of programs. He describes cooperation initiatives in LIS schools as economy measures against duplication of resources-financial, physical, material and human.

More specifically for KM education, the importance of collaboration within the LIS education system, and between KM educational providers has been emphasised throughout the literature. Clearly, for a broad multi-faceted area such as KM, it is absolutely imperative for its educational programs to be actively endorsed and supported by other academic groups and Industry/organisations. Koenig (1999), in investigating where KM education should be offered, argued that there was no one ideal place, and the education for KM was likely to emerge in various places. And again, in pointing out that education for KM would not easily fit into any existing academic disciplines or professional school, he recognised that it would be a stretch for any existing unit to provide the full range of what was needed. So as a consequence, effective education for KM would require cooperation between different academic units and involve both creativity and entrepreneurial spirit.

Collaboration between university departments to develop interdisciplinary certificates in KM, has been recommended by many researchers. In a study of different

approaches to knowledge management education in various academic disciplines, Chaudhry and Higgins (2003), concluded that in the delivery of these programs, information systems departments gave more emphasis to the IT component of the program, while information studies departments were more focused on information organisation and retrieval. Business schools, not surprisingly, were found to put more emphasis on business strategies. Hence, the authors suggested the need for a collaborative approach to knowledge management education, in order to avoid the danger of unevenness in content, and to provide learners with symmetrical coverage of different courses. Hence,

“We feel that the diversified skills ...require a multidisciplinary approach to impart education in support of KM roles...Our recommendation is to introduce collaboration in the design and conduct of KM programs to balance the various components in the KM curriculum. If knowledge management education programs continue to run in single departments or schools, there is the danger of biased contents in favour of the discipline housing the program... A collaborative effort/approach in designing the curriculum and conducting the program may bring the desired balance/ provide a balance coverage” (Chaudhry, A & Higgins 2003, P.2).

With recognition of the growing visibility of KM in the academic environment, Sutton (2007, P.6) also considers KM as an unprecedented opportunity for business, management, and library and information science schools to “Work alongside each other to architect the mix of education to help learners acquire the competencies and skills of the new knowledge workers”. While Sutton confirms the drawbacks associated with the current fragmentation of KM education on one hand, and the challenges associated with interdisciplinarity of its programs on the other, he asserts the need for possibly a KM Educational Manifesto—for the joint development of KM curricula amongst faculties, and for faculties to confer, consult, and collaborate to joint ventures in KM education and demonstrate the significance of the business value proposition attached to them. To do this Sutton added “The field requires informed and critical leadership from the academy as well as from business, industry and government in order to set priorities, develop policies, and architect new learning programs” (Sutton, Michael J.D 2007, P.5).

Investigating perceptions of KM education among the heads of 12 LIS schools from North America, Europe and the Pacific region, Rehman and Chaudhry (2005) also

identified collaboration and strategic partnerships as the key strategic thrust in KM education, and that collaboration was the most important strategy for making the KM courses successful. In their research into interdisciplinary collaboration, most heads were apprehensive about collaboration and related initiatives, expressing ‘political and turf sensitivities’ as the most serious impediments. Elsewhere, Rehman and Chaudhry observed that academic management in LIS schools was not yet ready for such alliances. They recommended improving the leadership skills of LIS faculty to take advantage of opportunities created by new areas like knowledge management. In research seeking to identify the perceptions of KM among LIS professionals in Australia, Southon and Todd (2001, P.1) came to the conclusion that “The breadth of approaches represented just by this group of information professionals suggests commonality may be difficult to achieve within the profession, let alone outside”. Likewise Chen et al. (2002), referred to the differences in perspectives of multiple KM educational stakeholders, due to their divergent educational backgrounds, arguing that KM effectiveness might be affected by a lack of integration.

Despite the above criticism, evidence of successful collaborative initiatives in KM education exist in the literature, including a research project on KM education, at Nanyang Technological University, Singapore. Examining a number of selected KM masters programs, the researcher identified the focus of many of these programs as being on two or more areas drawn from management, LIS, IT, communications and business (Loon 2002). Although this level of contribution might not be considered as optimal, at least it points to growing realization of the importance of collaboration.

The literature also indicates the emergence of cases of a multidisciplinary nature. For example, Chen et al. (2002), reported that, at the National University of Taiwan, the multidisciplinary approach was considered a basic requirement in curriculum development for a knowledge management program. There, the Departments of Library and Information Science, Business Administration, Information Management, and Computer Science and Information Engineering, joined together to provide a KM curriculum that aimed at preparing all-round KM professionals. They reviewed relevant existing KM programs and courses in other universities, and categorized them into the three domains of resources, management, and systems. Commenting on this initiative, Hawamdeh (2005), observed that cross-listing modules from different

academic programs within the university had many advantages with regard to the control and execution of the program.

The literature review led to the conclusion that, as with KM practice, its education should also be very much context dependent. Even in a broader context of education, there are calls for investments in education and training to match the knowledge needs of firms. Such a need in the KM field, for example can be deduced from the results of research investigating the skills and knowledge required of staff by knowledge management employers (Lai 2005). The findings of this study reveal that, although a majority of employers emphasised the importance of work experience, the kinds of experience required depends on the kinds of industry that the future KM professional might be working in. This could range from experience in KM programs and systems, teamwork experience, content classification and content classification systems (cataloguing and classifying information), training, database management and project management. This point is reinforced in a subsequent recommendation for firms to enter collaborative relationships with educational institutions that enable the institutions to provide, if not fully firm-specific, at least more industry-specific training (Psarras 2006). With regard to likely student demands in relation to work-related or action education/learning, Metaxiotis et al. (2003) and Psarras (2006) called on universities to promote themselves as learning organisations by:

- Putting a high priority on problem-based learning and project-based learning as parts of lifelong learning and action learning.
- Seeking cooperation and partnerships with organisations.
- Gaining more of a business orientation and including project work, in order to narrow the current gap between the needs and expectations of the academic and business worlds.

Psarras (2006) further added that what someone did at work could be turned into areas of learning to acquire academic credit, but also reminded the reader that distributing university qualifications through the new form of work-based learning credentials required partnering arrangements among organisations, universities and individual participants. He exemplified this statement with regard to Ford, GM and Chrysler, who for example, in conjunction with industry and a local university, had established

the Michigan Virtual Automotive College, to raise the levels of industry-specific education among automotive industry workers. Similarly, British Aerospace has linked with a number of UK universities to both deliver and accredit training from its virtual university. The same approach has been followed by Intracom in Greece. Such approaches offer opportunities to improve cross-disciplinary and multidisciplinary training for existing firm staff.

Referring to established consortium programs in KM (such as that at Henley Management College in the UK) as a powerful means of obtaining learning experience Lank (2004) recommended business schools to join a consortia of companies. This would enable them to stay focused on the real experience of other companies, to learn about KM challenges, and to share 'war stories'- whether in the form of a specific time-bound programme or an ongoing series of workshops and events. Todd and Southon (2000), also proposed active engagement with leading practitioners in KM, along with collaborative links between universities and industry, as important opportunities for KM education. "Institutions which are preparing people for roles in [KM] will need to be very flexible in the way that they act to best match the needs of the students with the opportunities of the market place, and the demands of the specific organisations in which they are working" (Todd, RJ & Southon 2001, P.325).

Arguably, therefore, a close partnership with industries would perhaps lead to more desirable outcomes for KM educational programs. Similarly, Parycek and Pircher (2003), argued that close partnerships with organisations allow for the implementation of course theories within real world situations and that the results gained then flowed back into University courses and provided for new and innovative approaches. In the real world of LIS education, however, interviewing 12 heads of LIS schools from North America, Europe and the Pacific region Rehman and Chaudhry (2005) found that most LIS schools lacked the necessary rapport with either business or public enterprises for one reason or the other, despite the prevalence of understanding and eagerness for such interaction.

In addition to the potential synergies described above, education for KM would benefit from collaboration with other interested parties. For example, it may use

libraries as sites for the implementation of KM lessons learned. As with other educational programs, contributions to the design and conduct of an accreditation scheme for KM programs would also be useful in enhancing the quality of education, and for creating greater unity among the providers. Implementation of such a system would of course be very challenging, and would require collaboration with professional associations with adequate experience in this area. Investigation of these aspects of collaborative efforts might be the subject of future studies.

2.12 Chapter Summary

As can be seen from an online search of LIS databases, there is already an emerging literature on the knowledge management dimension to LIS education. However, much of this literature is descriptive rather than research-based, depicting different approaches to knowledge management education in practical situations. This chapter has reviewed current developments in KM education for the LIS profession, and has sought to identify those areas which need further consideration.

The next chapter is devoted to the research methodology. It provides a detailed discussion on different aspects of the issue, including the philosophical assumptions underpinning the research, and the approaches adopted for data collection and analysis.

Chapter 3 : Methodology

3.1 Introduction

The previous chapter provided an overview of the research literature. This chapter covers and reflects on issues regarding research purpose, research logic, research paradigm, research design, and methods employed for data collection and analysis, as well as ethical issues.

3.2 Research Purpose

To identify an appropriate research methodology, the researcher first needs to consider the dominant purpose of the study. According to the purpose, social research can be classified into four different categories: to explore a new phenomenon (exploratory), to describe a phenomenon as it exists (descriptive), to explain why or how something is happening (analytical or explanatory), or to predict certain phenomena (predictive research). As Neuman (2006, P.33) points out, studies may have multiple purposes, however one purpose is usually dominant. The current research falls mainly into the first category.

3.2.1 Exploratory research

Exploratory research often occurs when the area of research/ the subject of inquiry is pretty much unknown. This type of research therefore, has been considered as appropriate for satisfying one's curiosity and to help the researcher to achieve a better understanding of the topic (Babbie 2004). As Neuman (2003) observed, exploratory researchers seek to discover new areas of study, to become familiar with the basic facts, settings, and concerns related to that area, and to create a general mental picture of conditions. According to Collis and Hussey (2003, P.10) "The aim of this type of study is to look for patterns, ideas or hypotheses rather than testing or confirming a hypothesis". Elsewhere in the library research literature, it has been asserted that exploratory studies merely suggest insights or hypotheses, but they can not test them (Powell 1997) . This is because, as Neuman (2006) remarks, little is known about the topic when the researcher begins to study it. Neuman further points to the fact that there are few guidelines for exploratory researchers to follow, and recommends that

they explore all sources of information and take advantage of serendipity. Accordingly, the research reported in this thesis is not designed to test any specific hypothesis or existing theory. In line with Neuman's recommendation, as knowledge management and particularly, education for knowledge management are quite recent fields, there were numerous issues that the researcher was interested in exploring. This resulted in the emergence of multiple research questions, and necessitated design of a lengthy questionnaire, and the conduct of extensive follow-up interviews.

3.3 Research Reasoning Process

There are two different approaches to the strategy of scientific inquiry in terms of theory building and testing, namely those of deduction and induction. While the purpose of deductive research is to test the validity of proposed theories in real world situations, there are references to the emergence of categories, themes, and patterns from empirical data in inductive analysis (Janesick 2000; Lancaster 2005). Inductive researchers therefore, begin with the specific observation of the empirical world, and then develop theories or hypotheses based on the evidence collected from their observations (Neuman, W Lawrence 2006). Inductive reasoning, as reflected in the literature, is applicable to many qualitative studies, as well as to a number of quantitative research works (McMurray, Pace & Scott 2004). As McMurray et al. point out decisions on the reasoning process/processes of a research study depend on the nature of the phenomenon under investigation. They further argue that choice of an inductive process will be more logical when little is known about the topic. The nature of this research project is, inductive and based on empirical observation in a still-developing field (Neuman, W Lawrence 2006).

3.4 Research Paradigm (Philosophy)

The term *paradigm* refers to a set of philosophies and assumptions about the world and the nature of knowledge held by a community of scientists, which influences the type of problems they investigate and their way of conducting research (Babbie 2004; Collis & Hussey 2003). A scientific paradigm as Neuman (2006, P.81) observes is generally "A whole system of thinking. It includes basic assumptions, the important questions to be answered or puzzles to be solved, the research techniques to be used

and examples of what good scientific research looks like”. The most common research paradigms are *positivist* and *interpretivist* paradigms; sometimes carrying alternative labels such as *objectivist* or *experimentalist*, as opposed to *subjectivist* or *phenomenological*. The two paradigms are to be distinguished on the basis of their fundamentally different views of reality, on what reality is and how one should investigate it.

3.4.1 Interpretivism

While positivists regard reality as independent objects, and apply logical reasoning to investigate research problems, interpretivists point to the subjective state of the individual, and argue that social reality is dependent on the mind (Collis & Hussey 2003). Interpretive researchers, as Neuman (2006) points out, tend to understand a particular social setting based on the understanding of people in it. The focal point of interpretivism is that social action is meaningful. As a result, the key to interpretive research is to understand and interpret individuals’ reasons for meaningful social actions (activity with a purpose or intent), and to understand social meaning in context, that is how people construct meaning in everyday life by considering the social context of action (Neuman, W Lawrence 2003). In general, Neuman (2006, P.88) defines interpretivism as an approach to the “Systematic analysis of socially meaningful action through the direct detailed observation of people in natural settings in order to arrive at understandings and interpretations of how people create and maintain their social worlds”.

Interpretivists therefore, study the world from the point of view of the interacting individual (Denzin, Norman K & Lincoln 2000c). They consider human (social) action to be inherently meaningful. To understand this meaning, as Schwandt (2000) noted, requires that one interpret in a particular way what the actors are doing. The interpretive enquirer’s values and beliefs, experience and expertise, insights and interests therefore, can all influence the results of an interpretive study (Collis & Hussey 2003; Klien & Myers 1999). This is to a large extent, in line with the nature of qualitative research in that “Beliefs determine what should count as facts” (Smith 1983, P.10).

There are references throughout the research literature that attest to the nature of the problem under investigation, the research objectives or even the researcher's assumptions, of the adoption of a particular paradigm (Collis & Hussey 2003; Orlikowski & Baroudi 1991). Accordingly, the nature of the study and its objectives, directed the choice of epistemology in the case of the current research. It falls largely within an interpretivist paradigm, in that it seeks not to identify or test variables, but rather to draw meaning from social contexts, in this case from the perceptions of educational key players within the LIS sector. In the epistemology of this paradigm, knowledge is seen to be derived from everyday concepts and meanings, in this case from current trends and practices in KM education.

3.5 Research Design

“Research designs are procedures for collecting, analysing, interpreting and reporting data in research studies” (Cresswell & Plano Clark 2007, P.58). Decisions on research design should be based on the research purpose, and on what best matches the research problem. As discussed earlier in this chapter, the research conducted for this thesis is exploratory in nature. Exploratory research normally uses qualitative techniques for data gathering, because qualitative methods are less bounded to a specific theory or research question (Neuman, W Lawrence 2003). Furthermore, exploratory research is more open to using a wide range of evidence and uncovering new issues. However, quantitative methods such as surveys can also be employed in this type of research (Collis & Hussey 2003; Neuman, W Lawrence 2003; Yin 2003). The research for this thesis has adopted a mixed-method procedure in order to enjoy the benefits of both approaches. As recommended by Cresswell and Plano Clark (2007, P.91) the word *mixed-method* has been embedded in the title of the thesis to convey the type of design being used in this research.

3.5.1 Mixed-method research

The mixed-method approach to research developed in the social sciences, also called *multi-method research*, integrates approaches from different research methods in a single research study. One common practice is to differentiate between quantitative

and qualitative research, based on viewing this as a dualism. However, many researchers consider this division to be superficial and to be avoided (Dunning et al. 2007). As a result, mixed-method research is employed to help overcome this divide, and to address the deficiencies of each of the single methods. Of course, as Cresswell and Plano Clark (2007) have noted, although researchers for many years have employed both qualitative and quantitative approaches in the study of the same phenomenon, mixing the data and putting them together is a new idea which has led to the introduction of the multi-method or mixed-method research style. The two terms have been used interchangeably throughout the literature and in this research as well.

There are several types of integrative designs, based on a sequence of and different emphasis in, using different techniques (Cresswell 1995; McMurray, Pace & Scott 2004; Tashakkori & Teddlie 2003), including;

- Two phases/sequential versus simultaneous/concurrent design: Two phases or sequential design includes the use of methods sequentially, in separate stages of the study. In contrast, concurrent or simultaneous design occurs when the researcher use the two methods in parallel, or simultaneously.
- Dominant/less dominant versus equivalent status design: Dominant/less dominant design involves more focus on one technique as the primary approach. However, in equivalent status designs, the weight of emphasis on different methods is almost equal.

In addition to the above classifications, which reflect the influence of timing and weighting factors on the choice of an appropriate design in multi-method research, Cresswell and Plano Clark (2007) referred to the 'mixing decision' (i.e. how to mix the data from different methods), as the third procedural consideration in picking a mixed-methods design. They identified three general strategies for mixing different sets of data, which lead to the development of four major types of mixed-method designs (See Figure 3.1). The mixing strategies and their related designs include:

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- § Embedding the data of one set within the design of the other set. The design associated with this strategy is called *embedded design*, and is used when the research design can be enhanced by a second source of data.
 - § Connecting the two data types, when the researcher realises the need for further data collection, after analysing the first set of data. The second phase of the research, which follows from the results of the initial phase is therefore, marginal and supportive, intended to explain the initial results. This strategy may lead to two different types of designs, called *explanatory design* and *exploratory design*, depending on whether the design begins quantitatively or qualitatively. Explanatory design is used when the researcher needs to enrich and explain the quantitative results with qualitative data. Exploratory design however, is used when the researcher needs more than exploration of the research problem to further understand the topic.
 - § Merging/or integrating the two sets of data either at the stage of data analysis or later on interpretation. The design using this strategy is known as *triangulation*. Triangulation is used when the researcher needs both types of data to address research problems. This design signifies the greatest extent of integrating methods, and includes the integration of different approaches at all or many steps in the study (QUAN+QUAL). The current research project uses a triangulation design, and merges quantitative and qualitative data at the stage of data analysis.

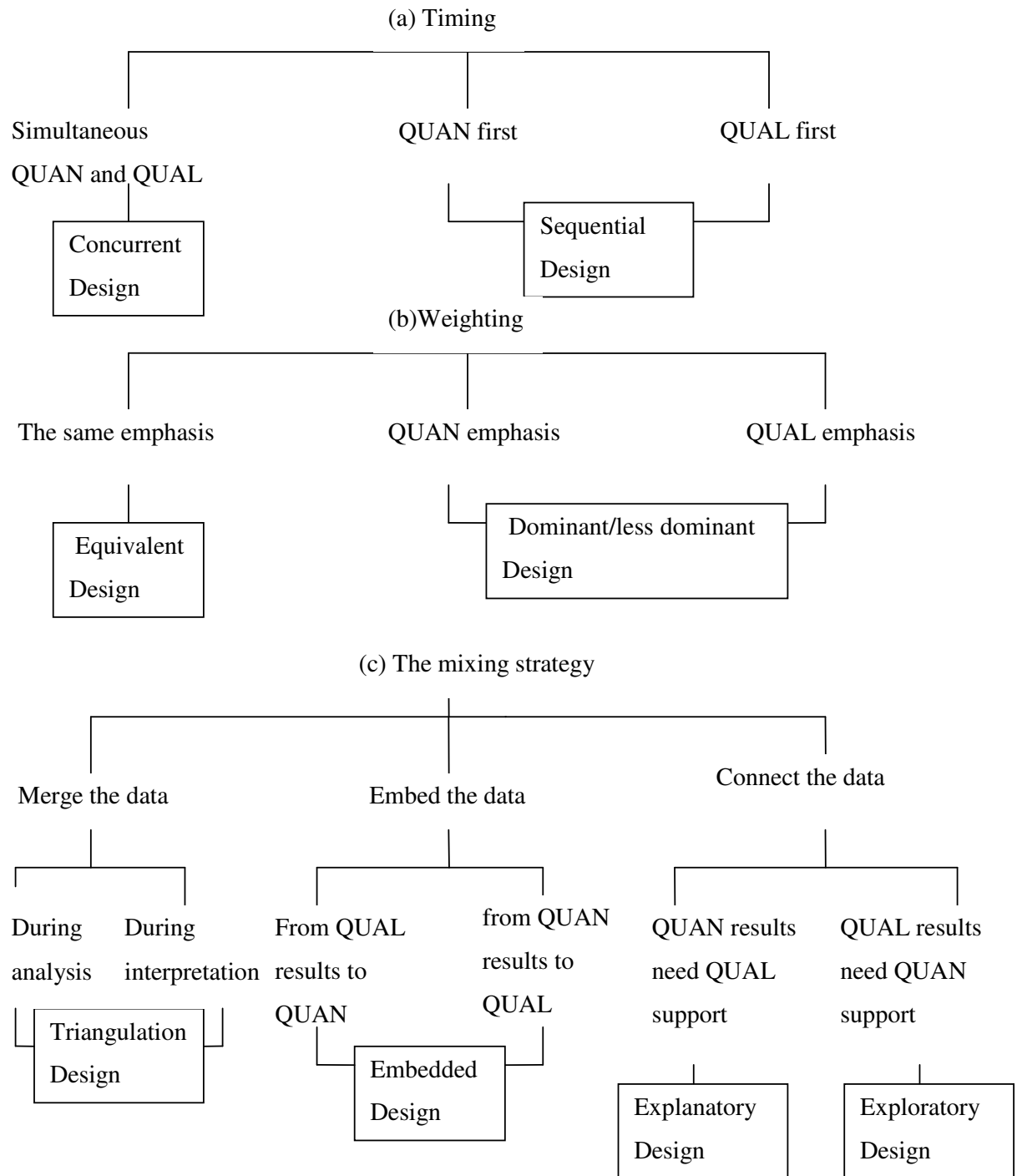


Figure 3.1 Different types of mixed-method designs based on three decision criteria.

An Adaptation of Cresswell and Plano Clark (2007, p.80).

3.5.1.1 Triangulation

Triangulation has been broadly defined by Denzin (1978, P.291) as the combination of methodologies in the study of the same phenomenon. It is one of several rationales for multi-method research using different methods to investigate research questions (Bryman 2004). The idea of triangulation in research came from a technique used by land surveyors or sailors, in drawing a triangle to check the accuracy of a distance measured between two points or objects. Hence, initially in the research field, triangulation was perceived as a mechanism for combining research methods to confirm the accuracy of research findings or as a validation strategy. Denzin (1971) however, extended the concept of triangulation to cover more than the combination of research methods, to integrate multiple theories or perspectives, researchers, and empirical materials. He distinguished four types of triangulation, including:

- Data triangulation: Including gathering data from a variety of data sources across three dimensions, either at different times, in multiple locations, or from different people.
- Researcher or investigator triangulation: Including the involvement of several researchers in the study.
- Theoretical triangulation: Including the use of more than one theoretical paradigm or perspective to interpret data.
- Methodological triangulation: Involving the use of more than one method for data collection.

Other types of triangulation have been acknowledged, such as multiple-triangulation (Mitchell 1986), which entails a merger of more than one of the above categories, or interdisciplinary-triangulation (Janesick 1994), which means combining multiple research elements from a number of different disciplines.

Among all of these categories, methodological triangulation i.e. the amalgamation of different methods, is acknowledged as the most common meaning of the term (Flick 2004; Mitchell 1986). Approaches to conducting methodological triangulation, include the *intra-triangulation* method and the *inter-triangulation* method. The intra-triangulation or internal method, uses a variety of methods of the same nature, and within the same research category, either from a quantitative or qualitative

approach. The inter-triangulation or the between-method or across-method however, consists of dissimilar but complementary methods from both qualitative and quantitative approaches. As it uses both qualitative and quantitative approaches, therefore, the current research falls into this category.

The purpose of triangulation is to add rigour, breadth, complexity, richness, and depth to the research, through the creation of complementary data (McMurray, Pace & Scott 2004). There are of course, many instances of applying triangulation as a strategy for validation, to enhance the confidence of ensuing findings (Flick 2004). The rationale behind this is that all research approaches have their own strengths and limitations. By applying a combination of approaches, therefore, a researcher may reduce the intrinsic bias of findings from one single method, and strive for more accurate data with a higher degree of validity (McMurray, Pace & Scott 2004). As a result, researchers often apply triangulation to examine the construct and internal validity of their research, and to increase the reliability of their results by cross-checking data, that is to confirm and verify data collected in different approaches. Indeed, the main goal of triangulation has been considered by many to be that of *confirming* a study's results (Dunning et al. 2007). This, as mentioned before with regard to the origin of triangulation, was the first instance of applying triangulation in social research.

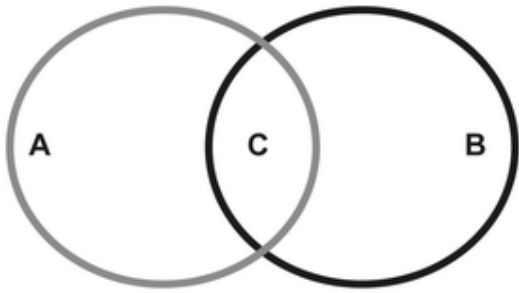
To extend the application of this approach, Jick (1979, P.138) refers to the purpose of *completeness* in some triangulation studies. He highlights the function of triangulation, beyond confirmation or convergent validation, to help reach a more complete, holistic, and contextual portrayal of the unit(s) under study. Triangulation in its initial sense however, was the subject of some criticism. Fielding and Fielding (1986, P.33) for example, referred to the problem of *extreme eclecticism* in applying triangulation as a validation strategy, and reminded readers that each method provides a unique way of investigating the issue. Bearing this in mind, they called upon researchers to implement triangulation with the intention of adding breadth or depth to their analysis, but not for the purpose of pursuing objective truth. Triangulation was thus considered less as a validation strategy, and more as a strategy leading to deeper understanding of the topic, and as an approach for justifying and underpinning knowledge by gaining additional knowledge (Flick 2004).

In more recent times however, Richardson (2000) suggests the concept of *crystallization* as a postmodernist deconstructionist approach to triangulation, and explains that the central imaginary for validity for postmodernist texts is not the triangle, but the crystal. According to Richardson (2000, P.934), “Crystals are prisms that reflect externalities and refract within themselves, creating different colours, patterns, and arrays, casting off in different directions”. Richardson argues that what we see depends upon our angle of repose. Crystallization as Richardson argues, without losing structure, deconstructs the traditional idea of validity, and provides us with a deepened, complex, thoroughly partial, understanding of the topic. In the crystallization process, as Denzin and Lincoln (2000a) emphasize the writer tells the same tale from different points of view, each telling, like light hitting a crystal, reflecting a different perspective on the issue. With this view of triangulation as a crystalline phenomenon, Denzin and Lincoln (2000a, P.6) confirm its extension beyond its initial understanding as a form of, or alternative to, validity. Here triangulation is the display of multiple, refracted realities simultaneously. Each of the metaphors works to explore competing visions of the context, to become immersed in and merge with new realities to comprehend.

Triangulation or crystallization, whatever the terminology, as Flick (2004, P.183) argues should be understood as a means of extending our knowledge of the research issue. The use of multiple methods, or triangulation, in Denzin and Lincoln’s words “Reflects an attempt to secure an in-depth understanding of the phenomenon in question”(Denzin, Norman K & Lincoln 2000a, P.5). In general, the efficiency of multi-method studies for answering research questions in more depth, has been considered as a driver for their increasing popularity (Kemper, Stringfield & Teddlie 2003, P.284). According to McMurray et al. (2004), multi-method studies generate richer data that may be applied to more robust theory building, hypothesis testing, and generalisation. They further refer to the potential of multi-method research to establish linkages between different methods which facilitate their synergies to discover relationships and the generation of ideas.

Methodological triangulation, as pointed in the literature, makes it possible to capture different aspects of the issue under investigation (Flick 2004). In a similar vein, as Shih (1998, P.636) reiterates “When using the strategies of data triangulation, the investigator explicitly attempts to maximize the range of data which might contribute to a more complete understanding of the topic being investigated”. Shih (1998) ascribes the purpose of triangulation to the research approach, and argues that achieving the purpose of confirmation may be more useful for quantitative researchers. Furthermore, she goes on to suggest that, in studies which address more encompassing domains of investigation, triangulation helps the researcher to get a complete understanding of the phenomenon being investigated. In this regard, Erzberger and Kelle (2003, P.469) point to the complementarity model of triangulation, as opposed to the model of triangulation for mutual validation, and argue that “The varying perspectives opened up by different methods may supplement each other so as to produce a fuller picture of the empirical domain under study”. The main intent of the current research lies actually here, using methodological and, data source triangulation to reach a deeper understanding of the topic, and looking at the issue from several angles by reinforcing both the LIS professionals’ perspectives with the knowledge of one’s own modes of action and routines in the field. Erzberger and Kelle (2003) indeed, confirm that both models of triangulation have strengths and weaknesses, depending on the research questions and the area under investigation. They further clarify that “The aim of method integration, be it the mutual validation of data and methods or the complementarity of research results, has to be determined on the basis of theoretical and substantive considerations for each research project” (Erzberger & Kelle 2003, P.483).

Here the *confirmation* and *comprehension* of results, as the two main goals of multi-method studies, are considered to have some linkages and are not regarded as being mutually exclusive (Dunning et al. 2007). Confirmation of results, as explained by Mitchell (1986), would be achieved when the findings are not method bound. Figure 3.2 is an adapted version of Mitchell’s diagram to reflect the achievement of confirmation and comprehension in multi-method studies.



A or B = Comprehension (method bound)

C = Confirmation (not method bound)

A + B + C = Comprehensive picture (method bound & not method bound)

Figure 3.2 Achieving the goals of multi-method studies.

Source: An Adaptation of Mitchell (1986, P.22).

The order of methods, or how the design in a multi-method study is finally put together, depends on the research topic, the research questions and the setting in which the research is taking place (McMurray, Pace & Scott 2004; Miller & Crabtree 2000). The research literature recommends description of the sequence of data collection involved in implementing multi-method studies in enough detail to help others to understand how convergent data was collected and interpreted (Jick 1979; McMurray, Pace & Scott 2004). For this research, an extensive literature review was conducted to assist with the formation of ideas and objectives before questionnaire design (Ali 1998). The review of the literature then, continued throughout the research to confirm the currency of the work. A survey was employed as the first instrument for data collection to help reach an overall understanding of the topic, and to identify those themes which required more clarification. As a subsequent procedure, in-depth interviews were conducted to address these gaps, and to better understand the issues by obtaining the insights of people who were actually engaged in KM education. Potential interviewees were located first, through the questionnaire and then through an analysis of LIS schools websites. Further details of each of these techniques are reported below.

3.6 Methods

The methodological instruments employed in this research include literature review and document analysis, followed by web-based surveys of LIS professionals and in-depth interviews of senior staff at LIS schools, mainly in English-speaking countries. The reason behind focusing on these countries was that universities there, as Lasic-Lazic et al. (2003) argue, have long played a leading role in education for information science, and since then have been a model and pathfinder for development of the profession.

3.6.1 Survey

As the first phase of data collection, a global web-based survey of the LIS community was conducted. The main purpose of this stage was to seek the perspectives of the international LIS community on KM education for the profession. Powell (1997) called this type of survey an ‘experience survey’, wherein the researcher gathers and synthesises the experiences of specialists and/or practitioners in a particular field. Powell moreover, confirmed the exploratory nature of this type of survey, which seeks to obtain provocative ideas and useful insights. Exploratory surveys as Powell observed “Can increase the researcher’s familiarity with the phenomenon in question, they can help to clarify concepts, they can be used to establish priorities for future research, they can identify new problems, and last but not least, they can be used to gather information with practical applications, although such results can not always be anticipated” (Powell 1997, P.58).

The web survey was designed to obtain access to participants from a wide cross-section of the LIS profession around the world. As KM and its education systems are still relatively new, in order to gain the perceptions of people who were actually knowledgeable in this area, the target population for the online-questionnaire was selected purposefully. Selection was based on the membership of international and national LIS listserves and discussion groups specifically related to KM, or to the educational issues it raised for the profession. This method of data collection, has been identified in the literature of online surveys as the most likely tool to obtain insights from targeted individuals in a range of LIS related studies (Zhang 1999).

Purposive or non-probability sampling, as pointed out by Kemper et al. (2003, P.279), is quite common in mixed-method studies, and occurs when the researcher applies some criterion or purpose to replace the principle of cancelled random errors. According to Patton (1990, P.169) “The logic and power of purposive sampling lies in selecting information-rich cases for study in depth”. With due attention to this point, for the present survey, potential communities of respondents were identified by navigating the internet and consulting the web sites of major LIS societies to identify those communities who had some involvement with knowledge management, or with educational issues within the LIS profession.

In order to maximize the chances of success with the questionnaire, the researcher joined a number of online communities, and contacted their administrators asking for help. A formal e-mail was first sent to the list owners seeking their permission to release the link to the questionnaire through their list. Then in April 2006, an email including the link to a web-based questionnaire was sent to the following lists:

- IFLA KMDG-L: The IFLA Knowledge Management Section mailing list.
- ASIS & T SIGKM-L: The ASIS & T Special Interest Group on Knowledge Management discussion list;
- CILIP LIS-EDU: The CILIP Education Librarians group discussion list.
- JESSE : A listserv discussion group on LIS education issues, and some;
- ALIA and SLA mailing lists.

To ensure the content validity of the instrument, the questionnaire had already been pre-tested on a random sample of leading LIS scholars in Australia, New Zealand, the United Kingdom and the United States. Their feedback was incorporated into the final draft of the questionnaire, which comprised a number of sections all incorporating both open-ended and closed questions (See Appendix A). These different sections sought responses on attitudes and opinions on education for KM including respectively: the status of such programs, the responsibilities of LIS schools, determinants, motivators, challenges and benefits in offering knowledge management courses, curriculum content, the strength of LIS curriculum in promoting potential KM competencies among LIS graduates, and finally, demographic-type information to do with job position, qualifications, age, gender, and country of residence. The

scales used in the questionnaire were non-metric scales, including nominal (age, sex, country, job position and qualification) and ordinal scales (5 and 7 point Likert scales, including level of agreement and level of importance). A brief introduction, providing details about the researcher, her affiliation, supervisor, the title of the project, the purpose of the research, the value of participation in the survey and a general definition of knowledge and its related terms, was provided at the top of the questionnaire.

Within the professional literature, the lack of a clear understanding of the concept of knowledge, and in particular the distinction between tacit knowledge and explicit knowledge has been blamed for the current confusion between information and knowledge in the LIS sector (Jashapara 2005). Hence, by providing a definition of knowledge, including both tacit and explicit forms, an attempt was made at the beginning of the survey to conceptualise different forms of knowledge and to help the promotion of an understanding of what the researcher means by KM among respondents.

There follows a brief discussion of the rationale for using the web-based survey and, the concerns often associated with its use.

3.6.1.1 Web-based survey: benefits and concerns

The online survey method was chosen for this research because of its advantages including:

- Wide geographic reach i.e. reaching respondents from all over the world in less time, with low cost (Hewson et al. 2003; Neuman, W Lawrence 2006; Sue & Ritter 2007; Wright 2005).
- The ability to connect with a wide range of target audiences in one go (Hadley 2006).
- Easy administration of the survey and data (Perkins 2004).
- High popularity among respondents.
- The high quality of data owing to lower non-response rates and more detailed, often more valid information from open-ended questions (Sue & Ritter 2007).

There are of course drawbacks to using this type of instrument, including;

- Problems of non-observation (Lozar Manfreda, Batagelj & Vehovar 2002), e.g. non-coverage, unit non-response and sampling:

- Non-coverage: Coverage error can occur when some members of the population of interest do not get the chance of being included in the sample (Sue & Ritter 2007). However, for special populations with high Internet coverage rates, most of the problems of non-coverage can be eliminated. For this research it seemed reasonable to suppose that librarians as a group have adequate access to the internet.

- Unit non-response: Unit non-response is the error that occurs when the respondents to an online questionnaire have very different attitudes to those who choose not to participate in the survey (Madge 2006). For example respondents' different levels of computer expertise can be a source of this error. According to Gunn (2002, P.5) "Non-response errors are the result of not all people in a sample being willing to complete the survey, or failing to finish it". This would be the case here, as respondents participated in the survey because of their interest in knowledge management or the educational issues of the profession. Only those respondents interested in KM participated. The problem of non-response error in this research was minimized through the conduct of follow up interviews based on the survey results.

- Sampling: As explained by Gunn (2002, P.4) "The sample in a web survey isn't really a random sample, and there is no method for selecting random samples from general email addresses". There is also the problem of having no control over the sample population. By way of example Madge (2006) points to the fact that the researcher "Has no way of discerning if there are several respondents at one computer address or if one respondent is completing a questionnaire from a variety of computers".⁴

- Selection bias: This includes the systematic bias of volunteer effect, because of the tendency of some individuals to respond to the survey as opposed to those who

⁴ This problem occurred in another research project here at RMIT University when a respondent distributed the questionnaire among some other mailing lists.

ignore it. Volunteer bias, can create a problem of the non-representative nature of the Internet population. Using quality sampling frames, moreover, raises the potential problem of self-selection bias among participants in Web -based surveys, something that is regarded as a major factor in limiting the generalizability (external validity) of results. (Gunther 2004; Wright 2005). Hence, as noted by Sue and Ritter (2007, P.32), “Respondents who self-select into web-polls are not representative of any underlying population; they tend to be individuals who have a particular interest in the survey topic”. But as has been pointed out elsewhere (See for example (Merriam 2001) where sampling has been conducted purposefully to obtain the most useful data, and to gain the insights of people who are actually knowledgeable in the area, it may result in acceptable outcomes. Hence, although this approach may not necessarily have resulted in production of a completely representative sample of librarians all over the world, it was the best method available. It was the most viable means by which to attract input from professionals holding diverse attitudes and well-formed opinions on knowledge management in the context of LIS and its education systems.

- Response rates: The calculation of response rates for online surveys is extremely difficult. This is not just because some mailing lists or online groups do not provide information on the total number of their subscribers, but also because there would be some degree of overlap among the members of related sources. The lack of control over sampling population, as previously mentioned, can also add to this problem. An alternative suggestion, therefore is to use the recorded number of responses rather than attempting to calculate a response rate (Zhang 2000).
- Technical problems: Various technical problems can occur with online questionnaires. A computer or server may crash, for example, especially if the questionnaire is very long (Madge 2006). This problem actually occurred in the course of the survey conducted for this thesis, with the result that data relating to four of the survey questions was lost. Fortunately, as most of the questionnaire respondents had provided their email addresses when completing the survey, the researcher was able to contact them and ask them to complete the four questions again. However, as the number of responses received back was not significant, these questions were omitted from the research.

3.6.2 Interview

After conducting the first phase of data collection, a preliminary processing of the questionnaire data was undertaken. The results from this part of the research served as the basis for in-depth probing and further exploration of the themes and topics raised. Thus, the results from the processed survey data were used to guide the design and implementation of the subsequent data collection procedure.

The in-depth interviews conducted in the second phase of the study were intended to enable interviewees to elaborate on themes covered or emerging in the questionnaire, and to shed light on the phenomenon of KM education as they as educators saw and experienced it. To identify those LIS schools which were actually involved in education for KM, and to identify the relevant academicians who were teaching KM courses, the researcher conducted an analysis of the websites of LIS schools. For this purpose the lists of institutions with accredited programs from ALA, ALIA⁵ and CILIP was consulted. Analysing the websites of these schools, and identifying the potential sources for interview, the researcher sent an invitation email to schools, inviting either the Heads of school or their senior staff to participate in an interview (See Appendix C). The email, as suggested by McMurray et al. (2004), acknowledged the purpose of the interview and introduced the main themes and topics that would be covered during the interview, to ensure that potential respondents understood and were comfortable with the process. After setting an interview schedule, telephone interviews were conducted with 18 Heads and senior staff from LIS schools in the USA, the UK, Canada, Australia and Kuwait during September and October 2006. A semi-structured interview guide, with appropriate protocols for conducting the interviews, and for collecting, analysing and reporting the data, was used to direct the interview process. A more detailed discussion of this method follows below.

3.6.2.1 Interview methods

The interviews allowed the researcher to explore in depth the perceptions of key players in LIS education. Denzin and Lincoln (2000b, P.633) consider the interview

⁵ This list was reached through (Willard & Wilson 2004)

as the art of asking questions and listening. Accordingly “The interview produces situated understandings grounded in specific interactional episodes”. An in-depth interview as described by Minichiello et al. (1995) implies the conduct of relatively lengthy and significant interviews, which in the case of the interviews conducted for this thesis lasted between 45 and 60 minutes in length. The in-depth interview is considered to be the most common data collection instrument employed in qualitative research and exploratory studies, where the researcher seeks to obtain a deep understanding of the topic and intends to develop theories or hypotheses rather than testing them (Denzin, Norman K & Lincoln 2000b; King 2004; Minichiello et al. 1995).

The research literature distinguishes between at least three methods of interview-structured, semi-structured and unstructured (Fontana & Frey 2000; Lincoln & Guba 1985; McMurray, Pace & Scott 2004; Rubin & Rubin 2005). The difference between these methods is as follows:

- In *structured* interviews the researchers knows what they need to know about the topic. As a result, questions and their order in structured interviews are pre-determined, and the interviewer aims for consistency in all interview situations. The role of the interviewer therefore, in this context is neutral. As a result, this style of interviewing, is considered as being less flexible in the way questions are asked or answered.
- *Unstructured* interviews, on the other hand, have been found to provide data in greater breadth and to give deeper insights. In the unstructured interview, the area of inquiry is somewhat undetermined, and the interviewer seeks to learn from respondents about the unknown issues that need to be investigated. Unstructured interviews, as McMurray et al. (2004, P.200) remarked “Differ from semi-structured interviews in that the interviewer follows only a general interview guide consisting primarily a few key questions to guide the interviewer”. As a result, they give the interviewees much more freedom to express their ideas in their own way (Morse 2002). Despite the merits of this form of interview, time pressures, on interviewees rather than the researcher, resulted in its being impractical for use in the present research project.

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- Semi-structured interviews enable the researcher to escape the restrictions of structured interviews, in terms of prescribed questions, and of the wording and order of questions, while having the ability to track any interesting ideas that might come up unexpectedly throughout the interviews (Rubin & Rubin 2005; Sommer & Sommer 2002). Semi-structured interviews were employed in this research project.

Telephone interviewing was considered to be appropriate for this research, because it is an economical approach which enables the researcher to access participants from all over the world. Furthermore, as confirmed in the literature, there is no significant difference between face-to face and telephone interviewing, when the nature of the topic is such that does not need the observation of body language for its understanding (Sommer & Sommer 2002; Sturges & Hanrahan 2004).

Errors in the conduct of interviews, as pointed out by Fontana and Frey (2000) may come from three sources: either from the respondent, in the form of their providing a 'socially desirable' response, through faulty memory, or attempts at hiding reality. Or errors may occur because of the nature of the task, for instance in administering the questionnaire, or the sequence or wording of the questions. Lastly, the interviewer's personal characteristics including age, race, class, ethnicity and gender may be the third source of error. The pre-established nature of structured interviews, as Fontana and Frey (2000) point out, minimizes the likelihood of the third error. The attendance of a third person, the researchers supervisor, during most of the interviews conducted for this research, helped to eliminate the errors associated with the interviewer or administration of the questionnaire. To minimize the potential for errors coming from interviewees, the researcher first confirmed the anonymity of the research and the fact that there would be no expectation of right or wrong answers to the questions. Furthermore, to help participants to avoid faulty memory, and to enable them to come to the interviews with a clear mind, they were informed in advance about the kinds of questions likely to arise in the interviews.

3.7 The Issue of Credibility

Credibility, according to Janesick (2000) has tended to revolve around the trinity of validity, reliability and generalisability. Janesick observes that for qualitative researchers, there is no need to use the terms validity, reliability and generalisability, because these are terms that more correctly apply to the quantitative paradigm. Instead, she proposes replacing those words with qualitative referents that more accurately capture the complexity and texture of qualitative research. Pioneers of mixed-method studies on the other hand, proposed other terms to incorporate both quantitative and qualitative orientations.

3.7.1 Validity and reliability

Validity and reliability are two aspects of credibility. *Reliability* in quantitative research simply means that the research findings can be repeated. To increase research reliability, research pioneers recommend using pretests, pilot studies and replication (Neuman, W Lawrence 2000). In the case of the survey employed in the current research, as mentioned before, “*pre-testing using Panel of experts /judges*” was employed. To further enhance the reliability of the research, *equivalence reliability* as explained by Neuman (2000) was applied, by using several items in the questionnaire to measure the same constructs. In addition, *replication* was considered for one question (more details have been reported in the findings chapter). Issues of reliability are much more subjective when it comes to qualitative research. Some have argued that, in the qualitative part, if the research produces convincing results, then it will be reliable (Golden- Biddle & Locke 1993; Maxwell 2002).

The researcher here, acknowledge Denzin’s (1989, P.32) point that in triangulation research the “Interpretation will always be provisional and somewhat incomplete, to be taken up anew when the researcher returns to the field”. In the case of qualitative research, Janesick (2000) confirms the possibility of different interpretations of an event and claims that there is no single ‘correct’ interpretation. Similarly Janesick (2000) asserts that there is no one best system for data analysis in qualitative research. Using a dance metaphor, whereby no one can choreograph an individual dance, she shows that it is only the researcher who can interpret data that emerges from

qualitative research. Like the choreographer, the researcher needs to find the most effective way to write the narrative, and to convey the meaning of the study to the reader. According to McMurray et al. (2004, P.249) therefore, “Regardless of what route you use in the analysis of your notes and observations, the accuracy with which they are interpreted is the measure of the quality of your research”.

Validity, as defined by Collis and Hussey (2003, P.58), is “The extent to which the research findings accurately represent what is really happening in the situation”. Within the multi-method context Cresswell and Plano Clark (2007, P.146), define validity as “The ability of the researcher to draw meaningful and accurate conclusions from all of the data in the study”. Teddlie and Tashakkori (2003) however, introduce the term *inference quality* as a mixed-methods term, to cover the quantitative term *internal validity*, and the qualitative terms *trustworthiness* and *credibility* of interpretations. According to them, inference quality indicates the degree of excellence of the inductively and deductively drawn conclusions and interpretations of a study which, includes both qualitative and quantitative approaches. To determine the accuracy of a study’s outcome they suggested the consideration of two criteria namely, design quality and interpretive rigor. *Design quality* as they point out, means within-design consistency, and includes the use of a whole set of criteria from both the quantitative and qualitative orientations, to determine the methodological rigor of the mixed-method research. *Interpretive rigor* then, involves the evaluation of the accuracy or authenticity of the conclusions, and includes the conceptual consistency and interpretive agreement (or consistency) and interpretive distinctiveness.

There is recognition within the research literature that using an integrated approach can strengthen the comprehensiveness or reliability and validity of a study (Shih 1998). Triangulation, as suggested by Denzin (1989), was employed in this research project to enhance the validity or trustworthiness of findings, by eliminating the researcher’s personal biases. According to Denzin (1989, P.26) “The combination of multiple methods in a single investigation will better enable the sociologist to forge valid propositions that carefully consider relevant rival casual factors”. Kemper et al. (2003, P.284) assign the use of *purposive sampling* procedures as evidence for the enhancement of inference quality (internal validity or trustworthiness) in mixed-method studies.

On the other hand, there are arguments within the literature that the validity is high in interpretivist research. According to Collis and Hussey (2003, P.59) for example, “A phenomenological paradigm is aimed at capturing the essence of the phenomena and extracting data which is rich in its explanation and analysis. The researcher’s aim is to gain full access to the knowledge and meaning of those involved in the phenomenon and consequently validity would be expected to be high under such a paradigm.

3.7.2 Generalisability (The external validity)

Previously, many qualitative researchers considered generalisation to be irrelevant to the goals of interpretivists. For example, Denzin (1983, P.133) noted that “ The interpretivist rejects generalisation as a goal and never aims to draw randomly selected samples of human experience”. For the interpretivist, as Denzin further pointed out, every topic must be seen as carrying its own logic, sense of order, structure, and meaning. Schofield (1993), however, referred to the growth of interest in generalisability among qualitative researchers, signifying that although the classical view of external validity, i.e. producing laws that apply universally is not the standard or goal of qualitative research, there is an emerging recognition that the studies in one situation can be used to speak to, or to help form a judgment about other similar situations. This understanding, as Schofield points out, led to attempts to reconceptualize generalisability in a way that was useful and appropriate for this type of research work. Referring to a number of alternative concepts such as ‘*fittingness*’, ‘*translatability/ comparability*’ and, ‘*naturalistic generalisation*’, Schofield highlights the consensus among them on the importance of providing sufficient information about the components of a study, including the entity studied, the context in which the studies are conducted, and the setting to which one wishes to generalise, to enable one to search for the similarities and differences between the situations. According to Neuman (2006, P.91), interpretive research is idiographic and inductive. It means that the bulk of the report is a detailed description of a social situation or setting. This *thick* explanation therefore, helps the researcher to provide generalisations and gives the reader a feel for another’s social reality.

In the mixed-method area however, Teddlie and Tashakkori (2003, P.42) suggest use of the term *inference transferability*, as an umbrella term which incorporates both the

concepts of external validity and transferability from the quantitative-qualitative nomenclature. Arguing that all inferences have some degree of transferability, they remind the reader that transferability is relative. That is, no research inference is fully transferable to all settings, populations or times. They further refer to the assumption held by a number of scholars, that the inferences generated in mixed-method studies are more transferable than the conclusions merely derived from their quantitative or qualitative components.

3.8 Ethical Considerations

The term ethics in research denotes the study and practice of making good and right decisions while engaging in research (McMurray, Pace & Scott 2004). Every research project needs to consider its associated ethical issues. Among these Fontana and Frey (2000) advise social scientists to be careful about three traditional ethical concerns, namely:

- Informed consent: Introducing the research to potential participants truthfully and acquiring their consent.
- Right to privacy: Keeping the subjects anonymous
- Protection from harm: Providing a guarantee that the research will cause no harm, physical, emotional or whatever.

To assure that these concerns were accommodated, this researcher completed two separate ‘Applications for Ethics Approval of Research Involving Human Participants’ for each phase of the research work, and received the necessary approval from the RMIT Business Human Research Ethics Sub-Committee (See Appendix D and E for the approval granted by the RMIT HREC). The Plain Language Statements (PLS) designed for each stage provided potential participants with a clear description of the project including: introductory information about the researcher and supervisor, with their affiliations, the title of the research work, the nature and objectives of the research and a brief background to it, the voluntary nature of participation, the rights of people involved, the extent of any participation sought, and the reason that they had been approached. The PLS also addressed issues of possible risks (if any) and benefits for participants, confirmed the guarantees of privacy/

protection of anonymity and data security, and provided contact information for further inquiries or complaints (See Appendix B and C). Providing potential participants with this information via email, for the survey – risk level 1 – the return of the questionnaire as proposed by RMIT Human Research Ethics Committee (2006) was considered to be consent. With the interviews designated as - risk level 2- however, consent in writing was obtained.

3.9 Data Analysis and Interpretation

The power of multi-method research in integrating separate data points from multiple methods has been confirmed in the research literature (Brewer & Hunter 1989). There are numerous recommendations within the literature for multi-method researchers to combine results, rather than reporting them in separate sets (McMurray, Pace & Scott 2004). According to Cresswell and Plano Clark (2007, P.83) “A study that includes both quantitative and qualitative methods without explicitly mixing the data derived from each is simply a collection of multiple methods”.

As Kemper et al. (2003, P.284) reiterate, multi-methods research generally empowers the researcher for the triangulation of data sources, and forms a multifaceted view of the research questions. Discussing the practical problems associated with triangulation, Flick (2004) distinguished between *case triangulation* and the *triangulation of data sets*. *Case triangulation*, as Flick observed, is the application of triangulated methods to the study of the same cases, which will can overload on participants and as a consequence, increase the danger of dropout. The *Triangulation of data sets* however, occurs when the methods are implemented independently. Triangulation happens later at the data analysis stage, in order to assess the data emerging in separate sets in relation to each other. The practical problem here, as Flick (2004, P.182) points out, is “How comparability of the samples, where the different methods have been applied, can be guaranteed”. This was indeed, an issue with the present research because, as discussed earlier, this research includes the implementation of between-methods triangulation on two distinct sets of samples, what Flick calls the triangulation of data sets. However, as notified elsewhere “Different methods might simply be tapping different dimensions, qualities, or aspects of a given phenomenon” (Hunter & Brewer 2003, P.581).

Onwuegbuzie and Teddlie (2003) considered two major rationales for mixed-method data analysis, namely those of representation and legitimation. *Representation* as they argue, is the generation of more meaning by extracting more, adequate information out of the data. *Legitimation* however, is an attempt to assess and document the rigor or legitimacy of the work, including the validity, trustworthiness, transferability, etc. of the interpretations. These two rationales seem to be compatible with the goals of multi-method studies in general, as noted earlier in this chapter. The main objective of the research therefore, as previously mentioned, was not to compare the results, but to elucidate divergent perspectives. Another problem that has been mentioned in relation to this type of study, is the possible influence of time difference, emerging from the sequential sequencing of the research problem (Flick 2004). This, however, was unlikely to affect the current research, because the time interval between the two phases of the research was just a few months. Accordingly, along with McMurray et al.'s suggestion, and to allow a more inclusive understanding of the topic, a convergent analysis of data from both the survey and case-studies was conducted in the present research.

As maintained widely throughout the literature, decisions about data analysis techniques in mixed-methods research should be based on the purpose of the research (Onwuegbuzie & Teddlie 2003). Onwuegbuzie and Teddlie (2003, P.352) define mixed-method data analysis as “The use of quantitative and qualitative analytical techniques, either concurrently or sequentially, at some stage beginning with the data collection process, from which interpretations are made in either a parallel, an integrated, or an iterative manner”.

Discussing data analysis within mixed-methods designs (See Figure 3.3) Cresswell and Plano Clark (2007) also refer to the existence of a concurrent form of analysis for triangulation design, and provide researchers with a general guideline for its implementation. This involves the conduct of a separate initial analysis of quantitative and qualitative datasets at the first stage, and merging the two datasets in the later stage to develop a complete picture of the topic. According to them, there are two different techniques for merging different types of data. The first technique includes transforming or converting one set of data into the other form, what elsewhere would have been termed *quantitizing* qualitative data or *qualitizing* quantitative data, to

make the two types of datasets comparable (Tashakkori & Teddlie 1998, P.125). In choosing this technique therefore, the researcher had the option of choosing to employ one of the two following analytical strategies including;

- Concurrent analysis of the same data from two methods through qualitizing
- Concurrent analysis of the same data from two methods through quantitizing (Tashakkori & Teddlie 1998, P.128).

The second technique as Cresswell and Plano Clark (2007) also reveal, is to compare the data without conversion through either a *matrix* or through *discussion*. The analytical strategy associated with this technique has been known as *parallel mixed analysis* (Tashakkori & Teddlie 1998). Concurrent (simultaneous) analysis of both quantitative and qualitative data also known as *triangulation of data sources* has been described by Tashakkori and Teddlie (1998) as the most widely used analytical strategy in social and behavioural mixed-method studies. Parallel mixed analyses as Onwuegbuzie and Teddlie (2003, P.366) confirm, may be used if the purpose of the mixed-method research is triangulation, complementarity, initiation, or expansion.

The comparison of datasets through discussion is the technique used in the current research. This analytical technique has been noted by Cresswell and Plano Clark as one frequently used in parallel mixed analysis, which occurs when the researcher examines the similarities of the results from both datasets in the discussion section of the study. In this approach, the researcher first presents a statistical result (in the form of descriptive or inferential statistics) from the quantitative part of the research, following it up with relevant quotes or information about a theme from the qualitative results, to either confirm or disconfirm the first mentioned quantitative results or vice versa.

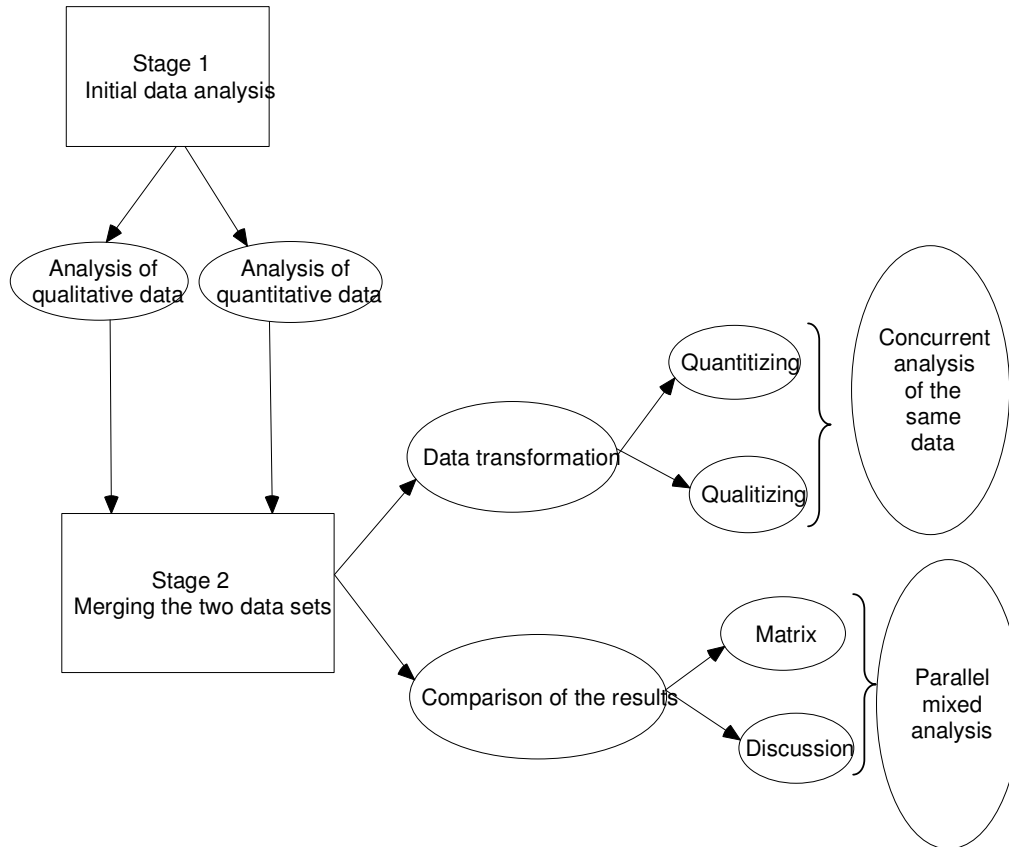


Figure 3.3 Concurrent mixed data analysis procedures and strategies in triangulation design.

An Adaptation of Cresswell and Plano Clark (2007, P.137) .

3.10 Chapter Summary

This chapter has reported how the researcher conducted the research process and executed data collection and analysis. Overall, the study was not designed to test any specific hypothesis or existing theory. The research is exploratory in nature, seeking to explore the phenomenon of KM education within the LIS sector. It falls largely within an interpretivist paradigm in that it seeks not to identify or test variables, but rather to draw meaning from social contexts, in this case from the perceptions of key players within the LIS education sector. In the epistemology of this paradigm, knowledge is seen to be derived from everyday concepts and meanings, in this case from current trends and practices in KM education. As little is known about the phenomenon under investigation, the research strategy or logic of the work is inductive. The method employed in this project comprises a combination of quantitative and qualitative approaches. Data collection was conducted through literature review and document analysis, followed by the conduct of a survey and in-depth interviews.

An integrated analysis of findings from both the questionnaire and the interviews is presented in the following chapter.

Chapter 4 : Analysis and Interpretation of Mixed Data**4.1 Introduction**

As discussed in the methodology section, the current research has employed the complementarity model of triangulation, and has sought for complementary results (Erzberger & Kelle 2003) . Patton's (1980, P.330) point is worth noting about there being no magic in triangulation. According to Denzin (1989, P.246), "The researcher using different methods should not expect findings generated by different methods to fall into a coherent picture. They will not and they can not, for each method yields a different picture and slice of reality. What is critical is that different pictures be allowed to emerge. Methodological triangulation allows this to happen".

Hence, the fundamental intent of the research was to generate a fuller picture of the domain under investigation, and provide a more comprehensive, understanding of the topic. The confirmation of results has not necessarily been an objective of this research, although in certain cases this has been achieved. What is presented in the following chapters, therefore, is an attempt to shed light on the implications of KM for LIS education, and to help provide a better understanding of the issue.

In line with Cresswell and Plano Clark's (2007) guideline on the concurrent form of analysis for triangulation design, discussed in the previous chapter, a descriptive analysis of quantitative data from the questionnaire was first conducted using SPSS 14.0 software. Then qualitative analysis of data from interviews and open- ended sections of the questionnaire was conducted, using NVivo software. To handle data management the researcher first went through interview transcriptions, identified the main themes appeared in the data and linked the chunk of data that represented a given idea or concept to its relevant theme. The data assigned to each theme then categorised into sub- themes. Relevant data from the open- ended sections of the questionnaire were also transferred into these emerging themes/sub- themes. *The Parallel mixed analysis* of data through discussion as discussed by the aforementioned authors was then employed as an analytical tool to merge qualitative and quantitative findings.

Throughout the following chapters, the analysis and interpretation of mixed survey and interview data has been divided into different sections, based on the main themes/categories that emerged from the findings. The current chapter begins with the demographics of the survey participants and profiles of the interview participants.

4.2 Demographics of the Survey Participants

It has been observed (Zhang 2000), that the calculation of response rates for online surveys is impossible. This researcher, in acknowledging Zhang's point has used the recorded number of responses to the survey, rather than attempting to calculate a response rate. In all, the survey obtained 106 responses, a relatively low number, and an outcome that may perhaps be attributed to the specialist theme and the length of the questionnaire.⁶ Although arguably, the questionnaire could have been more widely distributed, including to other LIS communities in order to obtain a greater response, the researcher decided not to do so. Justification for this decision can be found in Kemper et al.'s. (2003, P.279) argument that "Researchers using purposive [sampling] techniques, [should] seek to focus and, where practical, minimize the sample size, generally in non-random ways, so as to select only those cases that might best illuminate and test the hypothesis of the research team". Hence, in the case of the current survey, the researcher sought to concentrate on the respondents who were most likely to be interested in the area of study.

Arguably, the number of responses received was sufficient for the purpose of analysis. Also the responses that were forthcoming were those from people with a genuine interest in the topic and with potentially valuable contributions to make. Responses are reported here by category including: country of residence, gender/age, occupation, and level of qualification.

⁶ As one of the respondents of this survey, who is an author of this area, observed in an email to the researcher "I started doing your questionnaire, but found it too long. I am well away from the LIS education environment now, so my comments would not be that valuable."

- **Country of residence:**

The overwhelming body of response to the survey came from professionals in English-speaking countries. This is possibly a reflection of the earlier take-up of knowledge management in those countries, and of the higher levels of engagement with the issues concerned. As is clear from Figure 4.1, the majority of respondents (69.7 %) were from the USA, and Australia, some 35.8% and 33.9% respectively. Other responses came mainly from the UK, Kuwait and Canada. The average level of response from other countries, ranged between 1 and 3 responses.

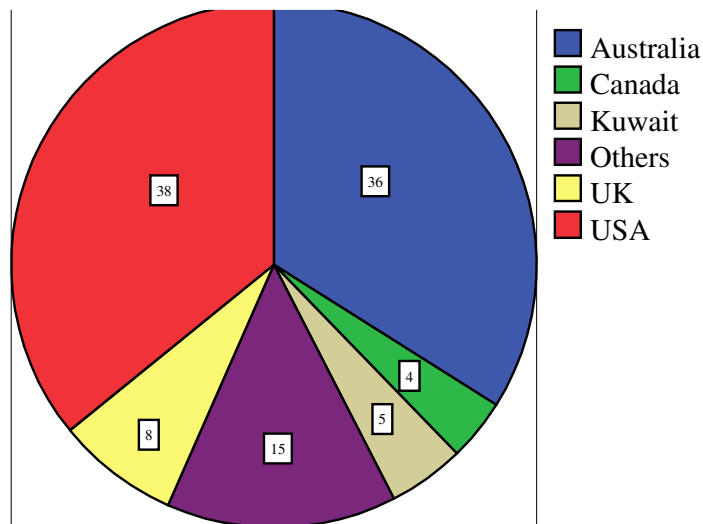


Figure 4.1 Country of residence of participants.

- **Gender/Age:**

The proportion of female respondents was 75.5 %, which is perhaps to be expected in a profession where women are so well represented.

As is shown in Table 4.1, 93.4% of responses to the survey came from people aged between 25 and 65 years old. Within this age range however, levels of participation were uniform (about 20% for each category), with most of the respondents (33.0%) falling into the 46-55 age group.

Table 4.1 Age groups of respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 25	2	1.9	1.9	1.9
	25-35	21	19.8	19.8	21.7
	36-45	22	20.8	20.8	42.5
	46-55	35	33.0	33.0	75.5
	56-65	21	19.8	19.8	95.3
	Over 65	5	4.7	4.7	100.0
	Total	106	100	100.0	

• Occupation

Information related to occupational status was collected from an open-ended question, with responses classified into 5 broad categories as shown in Table 4.2 below. This exercise was conducted, based on a view of knowledge professionals as “Someone who works closely with knowledge workers, understands their needs, provides direction, and facilitates various knowledge activities such as knowledge capture, knowledge retention, knowledge sharing, and knowledge transfer” (Hawamdeh, Suliman 2005, P.1200). To identify the specific job titles of these knowledge professionals, Angela Abell’s diagram of ‘Roles in knowledge enabled organisations’ (Abell, Angela & Oxbrow 2005)⁷ was used as a guide.

As a result, the following categories of knowledge professionals were surveyed.

- ‘Knowledge Conscious Leaders’ (such as Company Director, Manager, Assistant Director and Applications Manager),
- ‘Knowledge Facilitators’ (such as Knowledge Manager, KM Officer, KM Administrator, IM Specialist and Information Resource Manager) and
- ‘Knowledge Specialists’ (such as KM Consultants and Web Designers).

For other groups;

⁷ Abell, A (2005). The potential for librarians in the KM arena. Paper presented at IFLA, Oslo August 2005.

- ‘Educational academics’ encompasses educators, deans of LIS schools and coordinators of KM/LIS programs and
- ‘Students’, which mainly refers to graduate and research students.

Not surprisingly, as shown in Table 4.2, the majority of responses (42.5%) came from people who were most directly affected by educational issues, namely educators and students. This high level of contribution by LIS educators and students proved to be extremely valuable. Additionally, the participation of librarians and knowledge professionals to levels of respectively 35.8 % and 19.8%, significantly added to the practicality of the findings, and complemented the more theoretical responses of the academic groupings.

Table 4.2 Occupation of respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
	Academics	31	29.2	29.2	29.2
	Students	14	13.2	13.2	42.5
	Librarians	38	35.8	35.8	78.3
	Knowledge professionals	21	19.8	19.8	98.1
	Others	2	1.9	1.9	100.0
	Total	106	100.0	100.0	

- **Level of qualification**

Analysing participants’ level of qualification, it emerged that the majority of responses came from people holding a postgraduate degree either in LIS or in a non-LIS program. The high level of participation of people with postgraduate degree qualifications (68.7%) might be taken as a significant indication of the value of the data that was obtained. However, it is perhaps best not to make too much of this aspect.

Taking the missing data out, the remaining participants had either undergraduate degree or a non-degree qualification, in almost equal measure.

Table 4. 3 Participants' highest level of qualification.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Postgraduate degrees	68	64.2	68.7	68.7
	Undergraduate degrees	15	14.2	15.2	83.8
	Non-degrees	16	15.1	16.2	100.0
	Total	99	93.4	100.0	
Missing	System	7	6.6		
Total		106	100.0		

4.3 Demographics of Interviewees

The selection criteria for potential interviewees have already been discussed in the methodology chapter. As mentioned elsewhere, the total number of interviewees was 18. This number in fact, turned out to be sufficient, as signs of data saturation appeared. *Saturation* as indicated in the research literature, occurs when no new or relevant information or themes are seen to emerge from data, hence indicating that the sample size is adequate (Guest, Bunce & Johnson 2006; Richards 2005). The demographic information on interviewees was extracted from their schools' websites. This included information on country of residence, gender/age and occupation.

- **Country of residence:**

To better match findings emerging from the survey community, interviewees were selected from those countries that featured most in the questionnaire responses. The interviewees, therefore, came from the USA, Australia, the UK, Canada, New Zealand and Kuwait. Most of these interviewees were from the USA and Australia, with respectively 8 and 6 participants. The higher level of participation from these two countries may well be due to the identification criteria and procedures applied in this research, as well as to the professional interests of the respondents.

- **Gender/Age**

An equal number of Males and Females participated in the research, which although a random occurrence brought an element of equilibrium to the findings. Information on the age of interviewees was not obtained, as it was not mentioned on the schools' websites or the interviewees' web pages. The researcher therefore, considered that it might be awkward to ask interviewees about their age.

- **Occupation**

As discussed in the methodology chapter, purposive sampling was used in this research in order to reach people who had enough knowledge of and interest in, the topic, and who were actually engaged in KM education. The interviewees therefore, were either Heads or senior staff at LIS schools identified from the web as having some interest or involvement in education for KM. Occupation information for the interviewees is presented in Table 4.4.

Table 4. 4 Occupation of interviewees.

		Frequency	Percent	Cumulative Percent
Valid	Head of school	3	16.6	16.6
	Director of program	4	22.2	38.8
	Professor	1	5.5	44.4
	Assistant/Associate Professor	4	22.2	66.6
	Senior Lecturer	5	27.7	94.4
	Lecturer	1	5.5	100.0
	Total	18	100.0	

Chapter 5: Perceptions of KM

5.1 Introduction

With the emergence of KM to prominence, considerable debate occurred within the literature, not only as to its real value, but also as to whether it had a future or was simply another management fad (Abell, Angela et al. 2002; Blair 2002; Loughridge, Brendan 1999; Skyrme, DJ 1998). Subsequent discussions as to the nature of knowledge, and as to whether or not it was possible to actually manage knowledge, led to suggestions that KM might be an oxymoron (Broadbent, M 1998), and even to claims that KM was in fact nonsense (Wilson 2002b). The broad nature of KM, and the range of potential applications have also led to the emergence of different viewpoints on the scope of KM and of its constituent elements. Within the LIS field for example, divergent perspectives appeared as a number of people perceived KM as in effect, representing the appearance of *Old wine in new bottles* and regarding it essentially as resulting from a renaming of information management, a field in which librarians have always engaged. Others however, perceived KM to represent some kind of movement away from information management, and regarded it as a source of opportunity for the profession (Broadbent, M 1998; Davenport, E & Cronin 2000; Reardon 1998). These divergent opinions are acknowledged in the course of the present research, where from the outset an effort was made to clarify what KM might mean for the LIS sector and in particular, for library education. Accordingly, specific questions relating to the meaning of KM were included in both the online questionnaire and the follow-up interviews. Interviewees were also invited to comment on what they saw as the future of KM. Figure 5.1 maps the themes emerged from the findings.

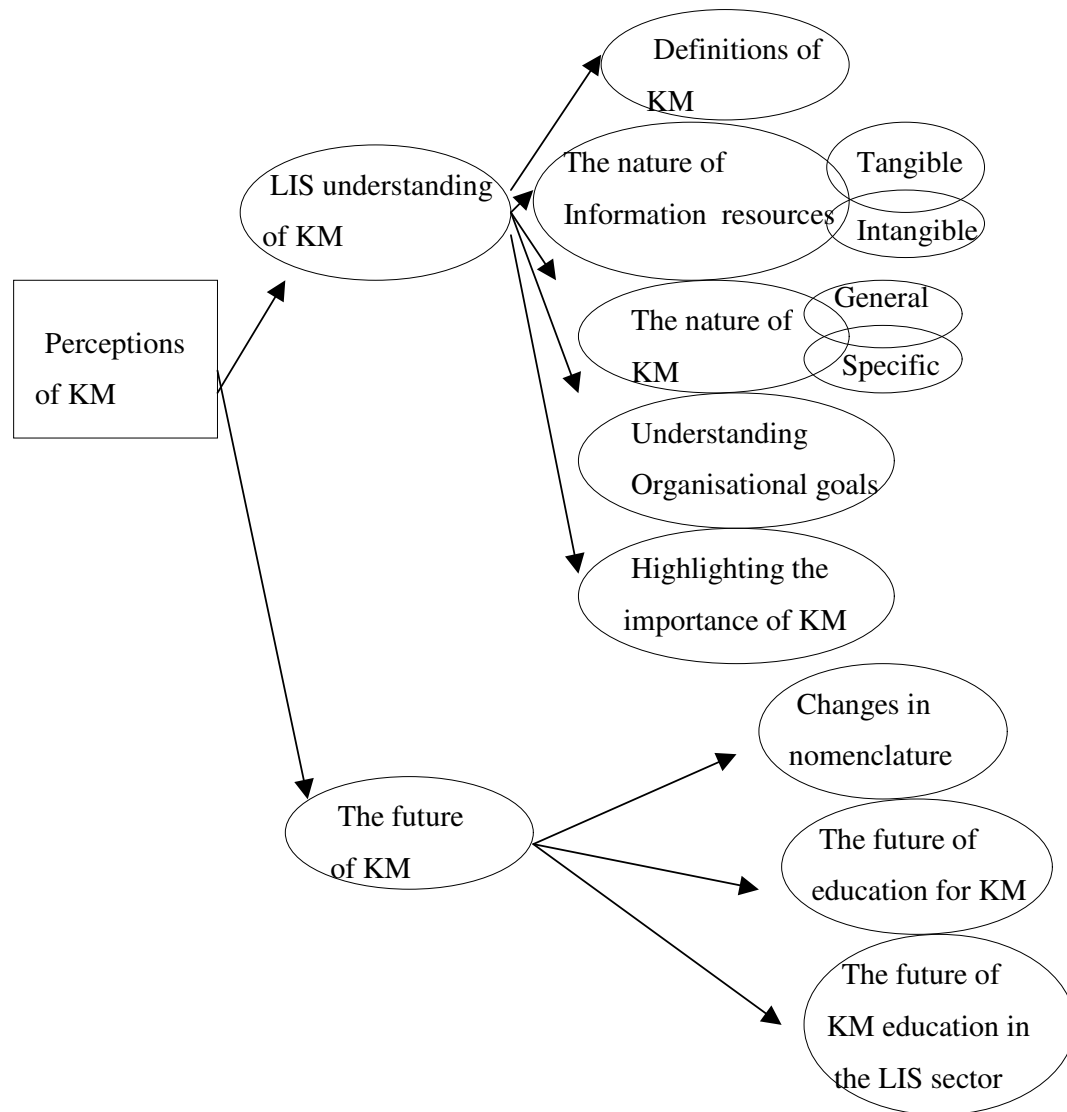


Figure 5.1 Perceptions of KM emerging in the research.

5.2 LIS Understanding of KM

This section first provides some quantitative findings from the survey on the most accepted definition of KM. In addition, a number of themes emerged as being significant in respondents' perception of the nature of knowledge management and how it is perceived in the LIS sector. Some of these themes had been anticipated in the survey, but the majority emerged during the interviews⁸. The themes are presented

⁸ In reporting qualitative data, QP stands for questionnaire participant and is used when a quote has been provided from the open-ended sections of the questionnaire. IP, however

here with data to support them. The researcher has also sought to place the themes in the context of the relevant literature, and has provided some comments to assist in understanding of the findings, as recommended for the practice of qualitative research (Hesse- Biber & Leavy 2006). This procedure has been implemented for the analysis and representation of qualitative data throughout the research.

5.2.1 Definitions of KM

As knowledge and related terms are very wide in scope, the questionnaire was preceded by the following statement:

For all its currency, knowledge management remains an ambiguous construct, and one that is highly contextual in nature and application. The same is true of knowledge itself and particularly, of the familiar dichotomy between explicit knowledge and tacit knowledge. For the purposes of this project, *explicit knowledge* is defined as: Knowledge that can be put down on paper, formulated in sentences or captured in drawings. Being formal and identifiable it is easier to capture and transmit. *Tacit knowledge*, on the other hand is knowledge that is informal, personal and hard to pin down, and so subject to individual awareness that it cannot always be articulated. These perceptions of knowledge are embodied in various definitions of knowledge management, some examples of which are presented in the first Question.

Also, in order to enable respondents to explain their own understanding of knowledge management, a number of different but representative definitions of knowledge management were provided. Respondents were asked either to choose from one of the five definitions provided, or to present their own alternative definition.

As shown in Table 5.1, the most popular choice (57.5%) was option ‘b’ which defined knowledge management as: “The creation and subsequent management of an environment which encourages knowledge to be created, shared, learnt, enhanced, and organized for the benefit of the organisation and its customers”. This definition has the advantage of inclusiveness, as it encompasses the concepts of knowledge sharing and the learning organisation, and points to the purpose of KM as being for the benefit of the organisation. Next came option ‘a’, which described knowledge management as “The acquisition, sharing and use of knowledge within organisations, including

stands for interview participants. To indicate the source, interviewees have been numbered randomly.

learning processes and management information systems”. 21% of respondents chose this option. Other definitions attracted less than a 10% response. A number of alternative definitions, reflecting different viewpoints were provided by respondents. These definitions along with data collected from interviews, have been presented under relevant themes at the end of this section.

It is noticeable that everybody answered this question, either by choosing one of the definitions provided, or by providing an alternative definition. This would seem to imply a certain level of understanding of KM among respondents, and with it some indication of an increased awareness of this emerging topic among LIS professionals. This kind of response, and the implied awareness that goes with it, has also emerged in related research in the KM field (Sarrafzadeh , Martin & Hazeri 2006). This earlier research sought to investigate the implications of KM for the LIS professions. There were strong overlaps in membership between the target populations for the earlier and the present study, namely through common membership of the IFLA KMDG-L mailing list. There were differences as regards the structure of the two surveys concerned, and in the nature of some of the questions asked, but the main point is that both surveys targeted people within the international LIS community, and both received very similar responses in regard to perceived definitions of KM. In line with Hunter and Brewer’s (2003, p. p.581) argument that if the same method is used and results are similar, then one has an assessment of reliability, the similarity in outcomes of these two online surveys could to some extent be considered as representative of the reliability of these instruments. Furthermore, as the respondents to the two surveys belonged to the same broad professional community, the results to some extent could reflect the generalisability of the findings, given the element of commonality in regard to perceptions of the meaning of KM.

Table 5.1 The most acceptable definition of knowledge management among survey respondents.

Knowledge Management Definitions	Frequency	Percent	Valid Percent	Cumulative Percent
a) The acquisition, sharing and use of knowledge within organisations, including learning processes and management information systems.	22	20.8	20.8	20.8
b) The creation and subsequent management of an environment which encourages knowledge to be created, shared, learnt, enhanced, organized for the benefit of the organisation and its customers.	61	57.5	57.5	78.3
c) The process of capturing value, knowledge and understanding of corporate information using IT systems in order to maintain, re-use and re-deploy that knowledge.	5	4.7	4.7	83.0
d) The capability of an organisation to create new knowledge, disseminate it and embody it in products, services and systems.	6	5.7	5.7	88.7
e) The use of individual and external knowledge to produce outputs characterised by information content and by the acquisition, creation, packaging or application and reuse of knowledge	10	9.4	9.4	98.1
f) Other (Please explain if you have a preferred definition)	2	1.9	1.9	100.0
Total	106	100.0	100.0	

5.2.2 The nature of information resources- tangible or intangible

Despite the efforts of KM leaders like (Nonaka, Ikujiro 1994; Nonaka, I 2005), to differentiate between information and knowledge, and to highlight the importance of tacit knowledge, there are still people in the profession who operate solely in terms of information and ignore knowledge, whether tacit or explicit (Broadbent, M 1998). Respondents attempting to define KM in this research project fell into two groups. The first of these groups essentially equated KM with IM, and defined KM in terms of information and information resources. Typical here was a survey respondent who simply recommended replacing the word *knowledge* with *information*, remarking that “I would want to use the word information instead of knowledge”. This practice of equating KM with IM is quite common, as these additional quotes suggest:

“KM is an umbrella term for the gathering and organisation of information in an organisation” (IP9).

“I can’t see any substantial difference between knowledge management and information management.... KM really to me, it means the acquiring of information, the organisation of that information and the appropriate distribution and or analysis of that information, which seems to me a task that librarians do” (IP1).

The second group of respondents, however, takes a broader view, and one that extends beyond the scope of information and IM to focus on the intangible nature of knowledge as an organisational asset. Their views are reflected in the following quotes:

“KM is about creating, capturing and reusing knowledge as an intangible asset” (QP).

“We think of it, you know as those processes by which organisations identify corporate resources and distribute knowledge, expertise and intellectual capital to their organisations” (IP5).

“The person who is responsible for KM is actually capturing not just the information ideas that are in some physical formats, but also attempting to capture the information ideas that people who work in the organisation carry in their minds and can bring to a project” (IP7).

The testimony from IP4 below, shows that within this second group, there are some people who while considering the scope of KM to extend beyond that of IM to include elements of tacit knowledge, nevertheless would regard KM as being *owned* by the LIS sector.

“For me knowledge management is a process where we basically have a lot of elements out of data mining, with both explicit and tacit information, to do with both what I call commercially available material such as that appearing in documents, books, articles or commercial databases and then also that material that appear in peoples’ notebooks...KM is just a fancy word for the things that libraries have been doing” (IP4).

5.2.3 The nature of KM- general or specific

Within the literature, knowledge management and its education have to date received a wide variety of treatment. As Broadbent (1998) has pointed out, the practice of KM has usually reflected a single underlying perspective. The perceptions of practicing professionals have also impacted on the teaching of KM, with a noticeable skewing of educational programs towards the specific focus applied by individual teaching departments (Chaudhry, AS & Higgins 2004). More recent research, also indicates the discrepancies of KM curricula, and the fact that most of the programs provide a limited perspective on KM (Saito 2007). To identify the kind of competences being developed in graduate KM education, Saito did an analysis of 40 then existing master’s programs in KM, and found that only 15 out of 40 programs were closely related to KM. Based on Saito’s findings, there are at least four distinctive streams in KM education, focusing on respectively information, the human dimension, computing or strategy. Saito’s research findings led to the conclusion that the distance between perspectives in KM educational programs seems to be high, and the original subject interests of staff strongly influences the focus of the program, which tends to remain limited.

The LIS literature indeed, contains numerous references to the need for a more generic form of KM education, but one which at the same time makes allowance for the perspectives of different disciplines. Such a need has also been underlined in the business literature. To support this, Bontis et al. (2006) argue that KM courses in different disciplines such as library science, engineering, e-commerce and leadership all appeal to a certain segment of the MBA marketplace and that there is a need for

KM educational programs to provide a generalist perspective. To this end, they express the hope that future KM curricula might cover as many management disciplines as possible. They also argue that the management aspects of library science and information management should be included along with a variety of other management themes such as intangibles, international literacy, customer data mining and alignment with organisational culture.

In the case of the current research, a second theme that materialized during the interviews was that of whether KM education should be treated as an inclusive, interdisciplinary field of study including all dimensions of the subject or alternatively, if it should be treated in a more focused and domain-specific fashion tailored to the needs of particular groups of professionals. One interviewee (IP3) observed that in the past, KM had been regarded in a largely subjective and domain-specific fashion, but that recently there had been attempts to widen this perspective and make it more integrative in nature. As an example of the earlier tendency IP3 described past educational programs in KM as follows:

“Organisational behaviour then used to look at it from the perspective of organisational learning, in information systems schools it used to be looked at as a set of principles for storing knowledge and sharing knowledge and modeling knowledge”(IP3).

This still seems to apply in some cases:

“I am in the faculty of IT, and my teaching area is LIS. We offer KM as an elective for postgraduate students. We also have some graduate certificates which we see as relevant to careers in IM and KM. Other faculties like business have their own KM programs, so the different angles come through based on their different interests. Hence management and business are looking much more at transactional processing within the management of an organisation, whereas the unit that we have as an elective does look at systems to a certain extent, but not fully. The lecturer is ex-government so he takes an organisational angle to it as well” (IP17).

Another respondent referred to the existence of units relevant to KM in the business and IT faculties at her university, along with a postgraduate program in Information and Knowledge Management in the faculty of humanities and social sciences. She pointed out that “Most faculties perceive very much that KM is a disciplinary stream that can be studied leading to a combination degree”. She also referred to the different

faculty approaches to KM as in effect constituting a *turf war*, and argued that “The ideal in an academic program would be that we would recognize that diversity and embrace it” (IP15).

On the other hand, evidence for a more holistic approach to KM within the LIS field can be seen in the following examples, each of which approaches the issue from a different perspective, including an emphasis on social aspects of KM (IP10), a focus on the business dimension (IP18) and the inclusion of other areas (IP13):

“We are working on some kind of more socio-technical perspective, where we have to be with people, and increase the tendency of people to share knowledge, while developing the system to store and by the way to refine and distribute it” (IP10).

“KM is largely a business discipline but an area where through content management, information retrieval and organization, the traditional LIS professions can make a contribution” (IP18).

“KM is an area of theory and practice which draws on other areas such as information management, human resource management, the learning organisation and to some extent information systems and technology, with a view to maximising the intellectual capital of an organisation” (IP13).

Despite such perceptions, there would still seem to be a fair amount of confusion as to the nature of KM among library academics, hence:

“Our problem is what KM is and whether it’s a general theme or whether it is domain specific” (IP11).

5.2.4 Understanding organisational goals

A general lack of understanding of the interplay between information and organisational objectives has been recognised as a major impediment to the full engagement of the LIS community with KM (Ferguson, Sarrafzadeh & Hazeri 2007). The comments of the interviewees below suggest that some recognition of the importance of this alignment is at least emerging among LIS educators.

“I think to a considerable extent it is more about habit of mind or an attitude towards making sure that we are not simply looking at the print material supplemented by the electronic resources, or just the electronic resources, but rather we’re looking at what we say about it, which is the whole world of ideas, and of information regardless of the format, including you know what’s

in the air in people's minds, and how we can really capture that to make it available to move the organisation forward" (IP7).

More specifically one interviewee argued that KM uses the same enablers as IM, but in a link with knowledge drivers, and in relation to what happens in business or industry. He identified these drivers as being fourfold, namely mission, competition, performance and change, and argued that LIS people need to view KM as follows:

"In terms of mission the question to ask perhaps is what is the industry or the sector trying to accomplish? In terms of competition how does the industry, or the sector or the organisation gain a competitive edge? In terms of performance how the organisation or the sector delivers the result? And in terms of change how does the organisation actually change?" (IP14).

A similar view has also been voiced in the following comment:

"[KM] is meant for improving organisational performance in terms of productivity, profitability, capacity for innovation by improving in different areas of knowledge from creation of knowledge, organisation of knowledge, sharing of knowledge ..." (IP16).

5.2.5 Highlighting the importance of KM

The library literature strongly supports a role for LIS schools in increasing the level of understanding of the potential of KM and its importance for information professionals, both in the profession at large and among academics and students (Rehman & Chaudhry 2005). It is also important that actual achievements in KM are acknowledged, a theme that is clearly illustrated in the following definition of KM provided by a questionnaire respondent.

"The creation of an environment that values the creation, acquisition, management, sharing and use of knowledge both external and internal, both explicit and tacit. And that values the expertise of knowledge managers and the role they play in that environment" (QP).

This view was also reflected in the interview data. The two testimonies below demonstrate that although there is still not a complete consensus on the nature of KM, there is evidence that more people have begun to recognize its importance:

"The jury is still out on what is meant by KM ...there are variations in views and definitions; but there is no doubt that at the moment out there in

information land, there is a view, and in the corporate sector there is a view, that knowledge needs to be captured and also recorded” (IP6).

“We would accept the argument that knowledge in itself is quite difficult to manage (all the Marianne Broadbent stuff) but nonetheless whether they are calling it a lot or it’s a holistic approach, a lot of companies are looking at their know-how, looking at the culture, looking at how they share and learn and whether or not we would put all that within the rubric of KM” (IP18).

5.3 The Future of KM

To find out more about the perceptions of KM in the LIS community, the interview participants were also asked about the future of KM. The data emerging in this regard comprised three sub-categories: changes in nomenclature, the future of education for KM, and the future of KM education in the LIS sector.

5.3.1 Changes in nomenclature

The majority of interview participants believed that the term KM would disappear. Below is an example of this kind of testimony.

“I don’t think that the term KM will prevail. I think that the term will stop or disappear” (IP1).

This viewpoint however, was supplemented with a continuing recognition among interviewees that the concept would not only stay but even evolve in the future.

“KM has a solid foundation and I can not see any reason for any threat for this discipline. However, we used to say that about CSCW (Computer-Supported Cooperative Work) in 1990, and that actually did not happen as it disappeared ... it disappeared but has been regenerated in other children. Now if that is what we call disappearance of the field I don’t mind, this is a good thing to happen. Let one field disappear but ten emerge in our work. That’s evolution; but if it means throwing everything into the rubbish bin; nothing is going to happen” (IP3).

Likewise:

“There is a great shift forward, but it depends on whether we are talking about the [KM] components or perhaps the label KM...I think we really want to position ourselves as a node for information and ideas that are available throughout the organisation and beyond. So I think that there is a huge

potential power for this, and I think that you will see that more and more things get done in this area. I'm just not sure whether it is going to be labelled KM" (IP7).

In support of the argument for the stability of KM components, IP6 maintains that there are already aspects of management like organisational culture and organisational politics that make a very strong contribution to the KM area. So, even if the term disappears, a lot of its components will not, and a lot of those educational materials can be used in other courses.

"What I find with a lot of what I am learning and teaching in the unit, is that it provides a really good foundation for a lot of my management stuff. I mean, I have always been interested in organisational culture and organisational politics and all those sorts of things, and a lot of this literature makes a very strong contribution to that area. So that even if I was to be told tomorrow to cut the course, or if we decided well KM is not being anything anymore ...you don't have to teach it, I'd be using a lot of this material in my other teaching"(IP6).

In line with the above opinions, IP2 also points out that the terminology will change, and that we might adapt whatever comes, but it will still be very important. She used the analogy of quality management and learning organisations and pointed out that although the terms have changed, they were still important and that people were still engaged in them.

"The name would be different, but you know just like quality management, isn't that half topic... people are still doing quality and quality management but it's just not the red hot topic, it was. And learning organisations are still happening and people are becoming certainly aware of the way they want their organisation to become a learning organisation, but it is not the front-page topic. So I think they need in varying degree to change terminology or we might adapt whatever comes but it's still very important" (IP2).

This movement however, is already considered by some people to be diminishing in importance.

"I think KM is a transient. What I mean by that is everybody is talking about it now but in ten years time it won't be KM everybody will be talking about. It would be something else. So I see KM as a Fad. And I think what might happen, this is my own personal forecast that I think we'll move towards a more systemic approach to organisational learning. And so by that what I mean is that you use a systems based approach as to management and a systems based approach as to organisational learning" (IP14).

But KM, at least as IP6 observes, “Will be around for as long as it’s seen as a catch cry and an organisational imperative” (IP6).

5.3.2 The future of education for KM

As indicated latter in section 6.5, the need for KM education has been firmly reinforced in the findings of this research. A typical comment in this regard was:

“We do need to know [KM] and we need to know better and quicker” (IP18).

For some people, (See section 2.5) education for KM will probably find its greatest expression in the industry sector. This notion is shared by IP8:

“Universities in general don’t have the capability to change quickly enough to embrace new techniques and frameworks and then offer new materials in the KM area. It normally takes 3 to 4 years to change a particular course or the curricula. This is too slow” (IP8).

As a result, IP8 believes that KM education will emerge under the aegis of knowledge associations such as KMpro and KMCI . Indeed he pointed out “There are a number of private sector corporate universities now teaching KM and they are becoming very successful”.

On the other hand, the importance of having a formal qualification for knowledge management is a prominent theme within the literature (Hawamdeh, S et al. 2004). This point has also emerged in the interview data, with a majority of the research community observing that KM education needs to be located in the university sector. KM education for many of these people, as observed by IP5 “Certainly will emerge and is emerging as a very focused discipline and area of study”.

And again:

“Like educational programs of other professions – medicine, engineering, and nursing- programs for educating knowledge professionals will soon be emerging”(IP8).

But, for many of these people, KM education would probably not be the same phenomenon taken across disciplines.

“I think it could well easily rise to a major, but it may not be the same major across the library school or a computer science department and the business school. So take very different, different approaches to that” (IP5).

So the future of KM education may well as IP4 asserts, “Depends on who’s going to grab the whole of that and claim it as their own”.

Nevertheless, in the view of IP15, there is no need in the near future for the development of KM education as a specific discipline.

“If we go to an organisation and start doing KM ... if we do our job properly, in about 3 to 4 years we should not be here anymore, and the organisation should be left with a knowledge enabled environment” (IP15).

5.3.3 The future of KM education in the LIS sector

In the review of interviewees’ perceptions of the future of KM education in the LIS sector, it became evident that LIS schools would seek to dominate in this area.

“It’s being interesting that a lot of very fine minds have spent time to thinking about it; and that developed a lot more ammunition for LIS; and some of the more interesting stuff we can do”(IP6).

“The [KM] concept is all that is there [in the LIS sector]; it is our first right so why do we not claim it” (IP4).

The two testimonies above serve as evidence that for different reasons, LIS schools need to and will, engage with KM education. Further discussion on this issue can be found in section 6.5. More generally, as demonstrated later in section 7.4, a wider focus for LIS programs has been proposed by many of the interviewees.

“We need to have more of it in our curriculum. As indeed, we need to evolve the curriculum in a number of areas” (IP11).

In the future, IP13 hoped to see a greater integration of KM education with different disciplines, and believed that this integration would most probably occur in an LIS context. To illustrate the way that this integration might happen, he used an example of looking at organisational information needs, and linking these to wider knowledge sharing issues when teaching information needs to students.

“I think possibly greater integration you find in library education...Certainly something that I am interested in doing, and I have been talking to my colleagues about here, so integrating KM into human resource management and while you are talking about information needs to students you don't just talk about the individual user, but about looking at organisational information needs and relating that to wider knowledge sharing issues” (IP13).

Much more interesting, in that it was unexpected, was the view among interviewees that KM education would be pervasive, and would be taught in all other disciplines, mainly as short courses in intensive mode. This view was shared by IP18 and IP15.

“I think it's going to be subsumed in the other programs in some sense...I think lawyers need to know about KM and marketing people need to know about KM, etc. So I think the future of KM education is in diversification and across a broader range of some of the disciplinary areas. I think the HR and the training about people management area will increasingly embrace some of the ideas of KM, they probably won't call it KM. They'll call it organisational development management, they'll call it talent management, they'll call it capabilities growth, they'll call it a whole lot of things, but it really is the rhetoric of KM... Maybe not calling it KM, but maybe something like enabling your organisation or maximising your knowledge capabilities or something like that to have a series of executive trainings with people, with already highly qualified people with MBA etc., can come along and do that short courses. Because I am seeing in some of my classes, I have got people that already have a master degree, and they are there because they want to know a bit about KM, they don't really need another degree, so that I think might be the future as well” (IP15).

The future success of KM education in the LIS sector therefore, as IP1 observes, depends on whether LIS schools can find suitable educators with a broad enough perspective to be able to embed the constituents of KM in all parts of LIS education.

“I think that our future as information managers, knowledge managers, and information scientists is going to be a good one, and our future is going to be very positive. But only if we are able to fill faculty positions with people who have a wide base of information rather than having the courses taught by someone who is very much grounded in the library field” (IP1).

The issue of staffing is predicted to exert major influence on the future of KM education. Hence:

“I am saying this from a dean’s perspective. I always look at resources that are variable and see how I can leverage existing resources to provide the best educational program that I can provide” (IP9).

So there clearly is a view in LIS circles that the future development of education for KM will be subject to constraints, including staff shortages. Hence “There are not many recognised people involved and that is a downside really” (IP10).

There was also a view among some interviewees, that KM education is going to prosper with the rise of I-schools⁹.

“Information schools will stand alongside, as professional schools... knowledge management, knowledge strategy really begins to become front and centre to those schools, that becomes their core ... information will be and knowledge and knowledge management will really be the core discipline. So, I think to that extent it will emerge very strong in the future” (IP5).

Less optimistically, an American interviewee observed that “I don’t have a lot of faith in the view that American LIS programs are going to jump on the KM bandwagon ... I don’t see major changes in the majority of the schools to accommodate KM unfortunately” (IP12). She then added that “I am very hopeful that

⁹ I- schools are a new category of schools emerging in the US with a central focus on information and linked also to people and technology. Starting with University of Michigan as the first place to embrace the concept, there are now about 20 I-schools (Ascione, 2005). It is noticeable that this group of schools is emerging from research based universities and has grown out of library or information science departments and IT or computer science schools. Further discussion on the distinction between these clusters of schools with LIS schools from the view point of interviewees has been provided in the latter section 7.4.

KM education might appear as a separate major in LIS, but I also understand the challenge” (IP12).

5.4 Conclusion

Debate continues within and outside the LIS profession, on the status of knowledge management in all academic fields, and whether it constitutes a real movement, or, is just a new label invented by business consultants, a form of semantic drift or a real conceptual shift (Davenport, E & Cronin 2000). Results from this part of the study have revealed the existence of a considerable degree of understanding among LIS professionals as to the true nature of knowledge management. This takes the subject beyond information management to include, not just information, but also knowledge in both tangible and intangible formats, and to embrace the concepts of knowledge sharing and the learning organisation. While a review of the literature indicates certain reservations concerning the implications of domain-specific perceptions of KM education (Chaudhry, AS & Higgins 2001), the generic nature of KM was confirmed in the current research thesis. A majority of participants endorsed KM in its broader sense, and acknowledged the need for inclusion of different dimensions of KM in LIS education.

Hence, although there are still some people who define KM simply as IM, and who do not see other dimensions to the subject, there is at least recognition emerging among the research community of the need for a proper understanding of knowledge management, of what it is, and of the importance of looking at KM from different perspectives. Furthermore, participants in the present research recognised the importance of KM for organizations, and the need for the LIS profession to acknowledge this feature of KM in order to align their professional missions better with the goals of the organisation.

On the matter of the perceived longevity or otherwise, of the KM concept, a majority of the participants believed that KM would continue to be important, but that the term KM would disappear entirely. However, they argued that its core concepts and constituent elements (albeit in a different form) will evolve, and will always be required. For some respondents, the need to learn about KM mirrors an earlier need to

learn about information literacy. If this should turn out to be the case then the future for KM, for KM education and for knowledge professionals could well be a rosy one.

Chapter 6 : Should LIS Schools Take KM Seriously**6.1 Introduction**

KM is a holistic multidisciplinary field which relates to a number of different disciplines. Accordingly, there are claims from various professional domains on the ownership of the area, including from the LIS domain. In the published literature, it has been acknowledged that LIS and KM have a significant overlap, particularly in the area of information management. As an example, Loughridge (1999) concludes that many aspects of knowledge management practice bear a close resemblance to well-established practices in librarianship and information management.

In contrast, there are also observations from within and outside the profession on the lack of complementarity between the two fields. To investigate the issue of whether LIS education needs to be more responsive to KM, a number of statements were included in the questionnaire with the aim of identifying general attitudes toward KM education. What follows is a report on those statements which attracted the most meaningful levels of response. Further clarification of the issue from the view point of interviewees follows later in the chapter. Figure 6.1 indicates the main themes addressed in this chapter.

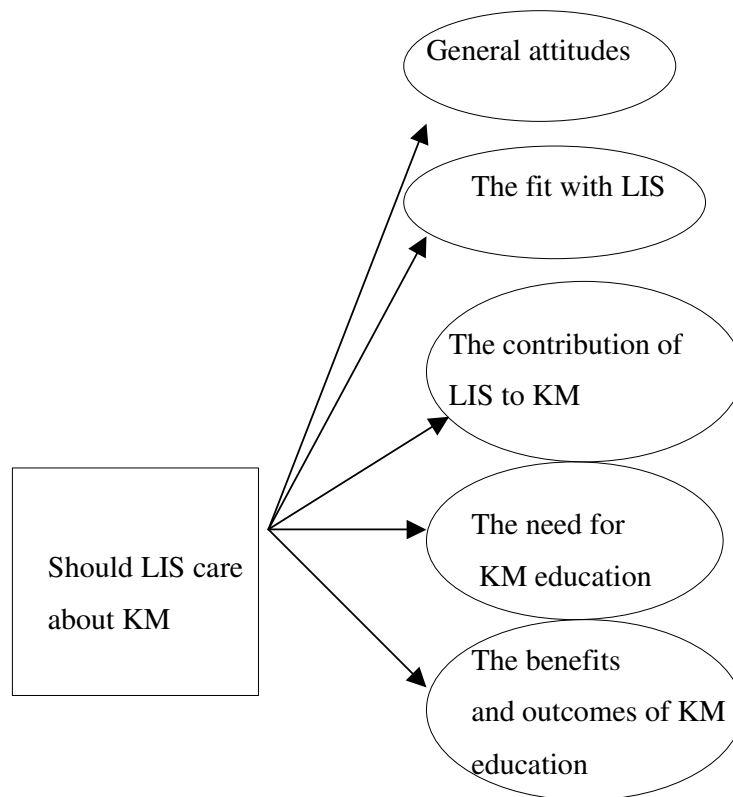


Figure 6.1 Themes supporting the need for LIS to respond to KM.

6.2 General Attitudes

Over the last few years, the relevance of KM to the interests of the LIS professions, and the growing enthusiasm for KM within the library and information sector has been apparent. However there are those who question whether the profession needs to engage with KM, lest in doing so it might lose its identity or put major components at risk. To clarify perceptions on KM, respondents were asked to indicate their level of agreement with the following statements:

a) The LIS profession should engage more fully with KM

In Table 6.1, it is interesting that 96.1% (a high majority) of respondents showed their agreement with this statement (combining agree and strongly agree). Just as interesting, however, is the fact that there was so much interest among respondents in

answering this. The manifestation of interest in KM is in keeping with the tenor of the literature on this topic. Indeed most LIS professional comment in the literature indicates confidence in the ability of the profession to make the most of opportunities in KM and to engage effectively with the full spectrum of knowledge management concepts. (Abell, Angela & Oxbrow 2001; Corral 1998; Koenig, Michael ED 2005; Loughridge, Brendan 1999; Reardon 1998; Southon, G & Todd 2001). Conversely in only a few cases such as that of Wilson (2002b) are leading LIS figures opposed to the concept of KM.

b) It is better that LIS professionals focus on information management and leave the other dimensions of KM to other disciplines

There is a view expressed within the literature that the main contribution that LIS professionals can make to KM is by engagement in information management (Sarrafzadeh , Martin & Hazeri 2006); with the corollary that it would be difficult or even impossible for them to engage in its other, more sophisticated aspects. This view can be inferred from the assertion of Ferguson and Hider (2006, P.91) that “The sheer scale of the tasks associated with KM makes it unlikely that the LIS professional could be expected to play a leading role in any KM initiative. We would suggest that the intellectual capital that knowledge managers are meant to be leveraging (or giving value to) goes far beyond the documentary forms to which the LIS profession has been accustomed”. To test this assertion in a wider context, respondents to the survey were asked if they agreed that the profession should focus on IM, and leave the other dimensions of KM to other disciplines. As is clear from Table 6.1, only a small portion of respondents (10.7%) agreed with this argument, with a clear majority (77.7%) recording their disagreement. The message coming from these respondents is that members of the LIS community participating in this project saw the value of seeking to engage in KM in its entirety and in the process, of expanding the parameters of the LIS profession.

c) The management of explicit knowledge is something which librarians do well

It came as something of a surprise to the researcher that, while the literature confirms that explicit knowledge is an area of expertise for information professionals (See for example Abell and Oxbrow, 2005), some 16.4% of respondents did not agree or were hesitant about this statement. This result could, of course, be viewed in two different ways. It might be a sign that elements within the LIS community lack confidence in their own abilities. Alternatively it might be an indication that the profession seeks to enhance its expertise even in areas where such expertise has already been demonstrated and acknowledged.

d) Librarians have the potential to manage tacit knowledge as well as explicit knowledge

It has been argued widely in the literature that, in order to make a major contribution to KM, LIS professionals need to have the capability of managing all forms of corporate capital (See for example Hawamdeh (2003). This includes reports that information specialists are moving into the area of tacit knowledge management (Abell, Angela & Oxbrow 2005). To identify current perceptions in this regard, participants were asked to show their level of agreement with the statement that librarians have the potential to manage tacit knowledge as well as explicit knowledge. It emerged that a great number of respondents (70.2%) agreed with this statement. Clearly agreement with such statements is one thing, and having the ability to perform the necessary functions is another, but the trend in perceptions is an interesting one.

Table 6.1 Percentage of agreement/disagreement with statements on general attitudes toward LIS engagement with KM.

	strongly disagree	disagree	don't know	agree	strongly agree	Overall ¹⁰ (mean)
a) The LIS profession should engage more fully with KM	1.9	1.9	-	45.6	50.5	Agree
b) It is better that LIS professionals focus on information management and leave other dimensions of KM with other disciplines	27.2	50.5	11.7	9.7	1.0	Disagree
c) The management of explicit knowledge is something which librarians do well	2.9	7.7	5.8	31.7	51.9	Agree
d) Librarians have the potential to manage tacit knowledge as well as explicit knowledge	2.9	10.6	16.3	44.2	26	Agree

Respondents to the survey raised a number of issues which also appeared or were included in the interviews. These themes included: the fit with LIS, the LIS contribution to KM, the need for KM education, and the benefits and outcomes of KM education. There follows a report on these qualitative results mixed with relevant quantitative findings.

¹⁰The following scoring has been designed for the purpose of marking the overall perceptions of respondents in section 6.2:

1 to 1.44= Strongly disagree

1.45 to 2.44= Disagree

2.45 to 3.44= Don't know

3.45 to 4.44= Agree

4.45 to 5= Strongly agree

6.3 The Fit with LIS

Based on the findings reported in 6.2, it seems that the LIS community appreciates the relevance of the two fields, with just one respondent opposed to the integration of KM into LIS on the ground that it was: “A time wasting 20th Cent practice of Librarians that distracts from the real business of the public Library...recreation”(QP). This view contrasts strongly with the majority view in the literature that KM is in fact relevant to LIS (Ferguson 2004). This majority view was reflected in the interview data. The only dissenting view among interviewees was based, not on the perception that LIS schools could take a leadership role in KM education, but on the assertion that they had missed their opportunity to do so, owing to a lack of leadership and communications skills among LIS faculties (IP8). The following arguments justify the case for complementarity between LIS and KM:

6.3.1 Viewing a broader role for librarians

As is clear from the literature, the increasing focus on information and knowledge as the main forms of organisational capital, and the importance of their management, has broadened the potential roles and responsibilities of LIS professionals (Abell, Angela & Wingar 2005). Although the tendency of LIS people to gravitate towards and focus more on their professional groups than on broader environments has been considered as a barrier for LIS entry to KM (Abell, Angela & Oxbrow 2001), the extension of the library job market to non-traditional settings, and the emergence of new opportunities have probably reinforced the case for LIS professionals seeking to adopt a broader role. This conclusion has emerged clearly from the interview data. IP1 said that KM should be included in any good LIS curriculum, but that it had to be promoted. This view was confirmed and extended by another interviewee.

“Information professionals need to know what it is, what’s being written about it and how people are trying to stake a claim for turf in what is ending in some of the articles to be a turf war” (IP6).

Furthermore, the similarity between KM and IM roles was pointed out by interviewees:

“I really believe that pieces of the things that you do as a knowledge manager are very closely aligned with what you do in managing information in general” (IP12).

6.3.2 Elements of KM are already present in LIS courses

Further evidence for the complementarity of KM and LIS, is that the LIS curriculum already covers a lot of KM territory. The existence of such coverage has been reported in other research. Lai (2005) for example, identified the requisites for KM through an analysis of KM job advertisements, and compared them with the curricula for the graduate LIS courses at the University of Pittsburgh. She found that to a certain extent, elements of the LIS curricula matched certain of the knowledge and information skills asked for in KM jobs. This overlap has also been detected in the course of the present research.

Among the comments of interviewees, IP4 for example, maintained that elements of KM were already present in LIS courses. What was needed was their integration into a single course. She gave examples where knowledge management was an element in records management, archiving, and meta-data. Hence she observed “We have all the pieces there. We just need to have a course that can pop it all together”. She then recommended that LIS schools assumed control of KM education, arguing that “The concept is all there, it is our first right, so why do we not claim it!” (IP4).

This conjunction between LIS and KM was highlighted by another participant who said, “I really believe that they are very, very closely related and I think a lot of the algorithms, a lot of the data mining programs, a lot of the things that KM uses is what information retrieval does in the larger sense ... I think the communities and the collaboration that are part of KM and knowledge discovery and algorithms that they use for knowledge discovery and knowledge organisation and taxonomies are similar to what we do”(IP12).

6.3.3 The interrelation between information and knowledge

Discussing what relates KM to LIS, the everyday interrelation between information and knowledge was advanced as a natural bridging method.

“I think the two methodologies come together naturally. We are trying to bill ourselves as an information school and so on without roots in both LIS and computer science! There is an effort to try to focus then on information as such as on knowledge as a phenomenon and to look at how it is managed” (IP5).

6.3.4 The complementarity of the two fields

The complementarity of KM and LIS is regarded as another feature to help justify the mutual relevance claimed for the two fields. As one interviewee remarked,

“I think the two of them can complement each other very well” (IP12).

This view is widely reflected in the literature, with many contributions noting the opportunities that KM has created for LIS on the one hand, and acknowledging the contribution of LIS to KM on the other hand (Abell, Angela & Oxbrow 2001; Abell, Angela & Wingar 2005; Bouthillier & Shearer 2002; Butler 2000; Hawamdeh, Suliman 2003; Koenig, Michael ED 2005; Rooi & Snyman 2006).

6.3.5 KM proficiency among LIS students

To assess the suitability of KM education for the LIS sector, the perceptions of LIS educators on KM proficiency among LIS students were investigated. Interviewees were asked how they saw the overall characteristics, performance and level of participation of LIS students in KM courses, including their understanding of business concepts. The following perspectives emerged from the interview data.

6.3.5.1 A preference for LIS students

Among the interview participants, there was a view that LIS students have at least the same level of understanding of KM as do other students, and sometimes a higher level than other students. Hence:

“I think that very often a library and information graduate can make a transition to the business environment much more easily than a business graduate can make the transition to applying whatever KM skills they have or organisation information skills they have to other environments”(IP1).

The ability of LIS students in handling both the theoretical and practical aspects of the issue was also underlined by this participant.

“The LIS students are the ones who have the broad view that is required to understand the concepts involved in the management of Information; whereas some other students do not have the ability to handle both the practical aspect and the human elements. They are one side or the other. Whereas I think we have both views; our history as librarians tells to us that there is no point in cataloguing that book unless somebody can find it and use it. So, we have the knowledge to organise the information; but we are organizing it with the user in mind and I think that is one of the unique sense that our field has in our history that doesn't happen in most other fields when they talk about the management of information”(IP1).

The potential prowess of LIS students in KM programs was observed by another interviewee.

“There is a lot of evidence that our students who are more proficient in course work and more advanced, tend to go on to the knowledge management course. We uniformly have good students in that class” (IP5).

6.3.5.2 A complementary perspective

The importance of matching student backgrounds to the nature of KM programs, and the uniqueness of each group input was affirmed by interviewees. The following quote demonstrates the point:

“I think from computer science though students could have more strength in systems, and building systems, our students I want to say, also have a background in computer science, but they will know more about programs and services and access to information as well as how information is used. I think that in the School of Management, courses may be geared to chief financial officers. People who go through MBA programs have a better grounding in resource issues than I think that people in LIS would have. So they are complementary” (IP9).

6.3.5.3 Potential deficiencies among LIS students

Despite an appreciation of LIS students' capabilities in learning about KM, participants also noticed areas where these students tended to be weaker. These included the areas of business acumen, work-place experience, marketing, confidence and information literacy.

1) Business acumen

As noted by Milne (2001), although there are imaginative modules and courses in LIS education, there is acknowledgement within the literature that LIS courses are not immediately recognizable to top management as relevant to the development of business high-flyers. Within the literature indeed, a lack of business understanding among LIS graduates has been underlined as one of the main reasons for their invisibility to KM employers, and is perceived as a negative factor which dilutes the impact of these peoples' skills in knowledge management initiatives at the strategic level (Abell, Angela & Oxbrow 2001; Ferguson, Sarrafzadeh & Hazeri 2007; Rooi & Snyman 2006; Sinotte 2004; TFPL 1999). The perceived ignorance of business goals among LIS students also emerged in the interview data.

“The LIS students I've had an opportunity to speak with seem to have absolutely no awareness of the need for the business side of KM” (IP8).

In this regard, a distinction between information science and library science students appeared in the interview data. In the case of a U.S. university, indeed KM was perceived as being best suited to information science rather than library science students.

“We offer mainly two degrees, one in MLS; Masters in Library Science and the other is Masters in Information Science. And I think that library science students would have a hard time with the idea of KM; however it seems to me that information science students are more familiar with the business environment ... Most of the students get a job in a corporate environment. So I don't see much of the conflict with information science students” (IP10).

Some interviewees drew a connection between an inherent lack of interest in business issues among LIS students and their ignorance of business goals. This view point is reflected in the following example.

“They [students] never seem to be interested to take business courses. They are actually not interested in it” (IP8).

On the other hand, enthusiasm for KM, the commitment of students to business goals and their understanding of the need for business acumen were pointed out by a number of other participants.

“KM is becoming very popular among our PhD students regardless of their area of research” (IP3).

And again:

“The students are not really in the habit of looking for a library careers, most of them go to the business...they really liked the KM course ..., they saw the usefulness of it and the structures of its suitability for jobs”(IP2).

“We offer a course related to e-commerce and it’s quite popular for information students” (IP10).

Likewise:

“In my experience the postgraduate students are sufficient in awareness to understand the business aspects...one of the modules that I actually teach in the information-knowledge management MSc is on the management of innovation and entrepreneurship. So I go through the different aspects of the business plan and what people would have to do to actually make some sort of business successful or to make their business ideas successful. And for their course work they actually have to individually write a business plan and complete that for they want to forward themselves which is generally half of the class. So about twenty people and then about twenty students look at existing organisations and some of them are librarians as well, and they write business plans for their organisations as good in libraries” (IP14).

Despite the above examples, the impression remains that certain core values in LIS are antithetical to careers in business. In this regard, one interviewee argued that some of the so-called ethos and core values that are perceived to exist among LIS students are really values of the LIS profession.

“I do have a constant battle with my students who will always say information must be free. We should not charge for any of our services. We do not believe in copyright... I don’t know where this, information must be free, comes

from...I do think that some of these supposed values and philosophies are a barrier to accepting some of what we've talk about in our program" (IP11).

This view was reiterated by another interviewee:

"If students sometimes reject the profit philosophy it's because they have no background in business concepts...They see profit equal to the exploitation of people in the developing world and this needs to be changed. They need to see some of the very good jobs that are available and get introduced to people who are business people with the conscience. So they should be taught that it is not business that is going to be conducted that doesn't care about the client; however the business that is actually going to not only turn to the profit for the company, but also do good in the world"(IP1).

The need for a change in students' perceptions of *for profit* issues was indeed quite widespread among interviewees:

"There are certainly people who come into our courses and are very library orientated. So they have a very particular service orientation. They tend to take a resource-based orientation, whether that's in terms of the old fashioned books and also the more modern version, they would be somebody who is keen in finding information and helping other people find information. That's the type of person who is attracted to that type of course, and it isn't necessarily going to be ideal for the KM environment; which are the themes in very much and are in the human resource management environment. So very much to be a knowledge manager you really need to be not just focused on the strategic objectives of the organisation, but you also got to be very people-focused. Now LIS students may be people-focused, but possibly not in the same way that required in KM" (IP13).

The creation of such refinements of course, as another interviewee observed would not always be easy.

"We try to instil some professional I would say ethical values in the students. But I don't think all of them accept those readily...I don't think that they are all interested or all of them are that interested. Some of them do have very definite ideas about what they want out of the MLIS and where they are going to go afterwards. Some of them will change their mind admittedly... I mean that's up to us to involve them and make them realize it's interesting and relevant, but I do think that there is a bit of a barrier engaging all of the students in all of the topics that you teach and KM is no different. You know; when we start talking about tacit and explicit knowledge some of them said what on earth that is! I don't care; just show me how to make a database. You know; that's just true of all subjects that you have in the curriculum, I think" (IP11).

But there is evidence that the shift in mindset is emerging:

“It’s more a matter of who has perhaps sometimes traditionally been attracted to our program rather than an actual overall lack of understanding” (IP1).

More clearly, IP12 refers to the change that is happening among LIS students as regards their ambitions, and the contribution that they can make to the knowledge economy, which he considers a positive point that make students capable of taking KM courses.

“I think some students come to the profession thinking they are going to go sit in a dark backroom and play with books. Those students will never get this concept. And I am not sure they even belong in our programs anymore, but they are changing. So I think generally students that understand that they have to put technology tools in their toolbox to be successful, will understand and really like the content. I also think some of our students now, you know we are into new generations and they understand that information is the commodity of the global economy and they understand that their career may not be linked to libraries. So I think we can make the case that we have got good students that can take on KM” (IP12).

2) Work place experience

A lack of previous work experience in organisations was identified as a weak point for most LIS students in learning about KM. This point was made by IP15:

“The people that seem to be the best are those who have some maturity in the work force, that have been in a number of organisations and have played multiple roles in the organisations. So it’s not so much that they are better than LIS but they seem to have much diversity of experience. So they can actually understand what an HR department do, because they had an engagement with one at some time. They understand what’s marketing, what’s strategic planning, and they understand the diversity” (IP15).

In line with this IP17 also argues that:

“In terms of teaching it [KM] mature students are fine who have got business experience or at least life experience, they know how organisations work”(IP17).

3) Marketing

A lack of effective marketing skills in the profession, and the need for LIS graduates to market themselves more effectively pervades the professional literature (Abell,

Angela & Oxbrow 2001; Breen et al. 2002). The poor performance of LIS students in marketing their competencies was reflected in the interview data. Referring to the existence of a very strong marketing component in the IT sector, IP6 attests that:

“I think our LIS students are extremely well prepared, but when it comes to competing with other backgrounds, particularly with the IT area, you know they really have to be very strong and very self assured to be able to sell themselves against someone who comes from that background”(IP6).

4) Confidence

For many, such as Butler (2000) the only real barrier stopping the information professional from carving out a role in KM is the individual. The need for LIS people to improve the confidence to apply their skills in KM has also been emphasised in the literature (TFPL 1999). This perceived lack of confidence among LIS graduates has been identified in the interview data as an obstacle to their moving to the KM sector:

“I have interviewed a number of people who have both an MLIS and an MBA, and I would say I have and I think that the people I have spoken to generally agree that MLIS students are probably have a stronger academic background, better students, but the MBA program students are much more self confident and much more highly motivated” (IP7).

5) Information literacy

In the knowledge-based economy, there is no doubt that enrichment of information literacy among knowledge workers is an urgent need for most organisations. The exigency of this need is such that Abell and Wingar (2005) consider it as a necessity rather than an option. While there is a widespread view within the literature that nourishment of this literacy or the improvement of information-seeking behaviour, necessitates a wider range of competencies than LIS professionals normally possess (Butler 2000; Ferguson 2004; Hawamdeh, Suliman 2003), there are also calls for these professionals to acquire sufficient technical skills to train others, and to learn about KM enabling technologies in order to facilitate this development (Rooi & Snyman 2006). The need to gain these competencies was identified by an interviewee:

“They [LIS students] have very, very poor information literacy skills. As a result I have to spend a great deal of time just training them on how to do retrievals in Google properly” (IP8).

6.4 The Contribution of LIS to KM

Regarding the issue of what LIS people bring to KM or to KM education, Butler (2000) argues that many information professionals become either very assertive or very defensive in the role that they play and the contribution that they bring to KM field. The interview data featured examples of each of these kinds of response.

For example, there was a view among the interviewees that LIS is much more than a contributor to KM, and that in fact, LIS embodies KM:

“I see the LIS discipline as being as the umbrella and that KM education; whatever that is, is within that umbrella. So I would see that it’s not that LIS contributes to KM but that instead KM is within the LIS discipline” (IP1).

On the other hand, was a participant who while recognising the contribution of LIS to the organisation of knowledge by means of taxonomies and ontologies, was of the opinion that LIS had very little to contribute to KM either in general or in his own university:

“If you are asking about potential of LIS to contribute to knowledge management; then I have to say very little. I have become very, very cynical. I have lost faith that LIS can contribute anything to knowledge management or there is any potential contribution of LIS here at my university” (IP8).

Such examples aside, however, most participants believed that LIS could make a significant contribution to KM. In this regard, IP5 called for LIS professionals to seriously consider their contribution to KM. Some interviewee perspectives in this regard follow below:

6.4.1 Information management competencies

Information management competencies are so crucial to the implementation of KM that some commentators consider them to lie at the heart of any successful knowledge management strategy (Amos & Chance 2001). Further, there are claims that knowledge management is based on sound information management practices (Broadbent, M 1998) or that KM results from a combination of IM with other activities (Middleton 1999). The inclusion of terms such as *information* and *knowledge management* in the title of degree programs, is also an indication of this importance. Another view emerging clearly in the literature is that which holds that since information management is an important part of every knowledge management project, LIS professionals with the relevant information management skills have the potential to be significant players in knowledge management initiatives. Accordingly, whereas information management is not in itself the same thing as knowledge management, knowledge is communicated through information, and hence information professionals have the theoretical basis and practical skills to provide an essential element of knowledge management (Abell, Angela & Oxbrow 2001). More recently, also it has been claimed that “Librarians’ experience with information sciences should furnish them with special insight into the management of information (and knowledge) as a commodity” (Sutton, Michael J.D. 2007, P.39). Indeed it was claimed much earlier that many of the required skills and competencies for KM were already addressed in the LIS curriculum (Loughridge, Brendan 1999). Certainly the ability of LIS graduates to make a significant contribution to KM through their information management skills was acknowledged by the interview participants. Hence:

“We understand what information is; and we understand the complexity of it; we understand the need to find access points” (IP4).

And again:

“I think the obvious one would be in the traditional areas of information storage and retrieval and that’s where we would be recognized as having the expertise” (IP11).

The promotion of information literacy is another way in which librarians can make a contribution to KM (Martin, Hazeri & Sarrafzadeh 2006). The credibility of LIS students in this area was recognised by two of the interviewees (IP13 and IP16), as

they identified information literacy as another possible area in which LIS graduates could make a distinctive contribution. In this regard for example, IP16 remarked on the visible contribution of LIS professionals in designing literacy programs and helping knowledge workers. On the importance of this contribution IP13 added, “Having an information literate work force is an important factor in having and building a knowledge sharing culture” (IP13). It is worth noting that the lack of this skill among LIS students has already been mentioned as a weak point among LIS students by another interviewee (See section 6.3.5.3).

Another potential contribution of LIS to KM, emerging from the interview data was that to do with organising things. For example, IP12 pointed to the contribution of library science to what she called *the science of organising things*, and the importance of data mining and the algorithms of taxonomies for the retrieval and presentation of data and knowledge. IP13 pointed to information organisation as the most important area of LIS competency.

“Probably it would be in the information organisation area. And you know; I think that is something that if you look at the use of thesauri within organisations and increased the emphasis on taxonomy in the KM sphere and those of areas in which LIS graduates are the fairly strong grounding”(IP13).

The importance of this competency among LIS professionals was also underlined by IP15 and IP16.

“To make information structure, organisations need people who can design architecture knowledge environment, both in a technical and non-technical sense. So some of this, you know; this core of library and information science around taxonomy and thesauri development is really important” (IP15).

“Traditionally we have been offering many courses which are related to cataloguing, classification, indexing, retrieval...And with that kind of background, if we could just develop those courses which would also cover like knowledge mapping, taxonomies and these sorts of things, then definitely we can contribute a lot to that area” (IP16).

The credibility of LIS people in managing documentary forms, is further enhanced in the following example, where according to IP5 the focus of LIS on aspects of organisation, access and usability represents its distinctive contribution to KM.

“As a profession we can continue to add a lot of value for that’s particularly knowledge organization and structuring it and indexing it and developing thesauri around it, how to access it, how to use the content to create retrieval from it. I think, with access of the material as well we can make a contribution...I would also say, part and parcel of our contribution is usability. Understanding what users need, understanding what constitutes a good usable systems, how to define specification for those systems in terms of user-driven specifications, bringing the user into the process. Those are all things that we have done for a long time when only we think about the reference services and so forth” (IP5).

In more general terms, there was a view among interviewees (for example IP16), that information was an integral part of KM, and that LIS was the major contributor to the discipline of information management. Indeed as Gandhi argued elsewhere (2004) that, since the organisation of knowledge has always been the strong suit of librarians they must not only engage in, but also actively spearhead knowledge management initiatives. The lack of realisation of the existence of this pool of knowledge among LIS professionals by the wider KM community corresponds to what Koenig (2005) calls as missed opportunity for librarians in the third stage of the evolution of KM. According to Corral (1998), the need for ongoing content management in the later stages of KM implementation, has highlighted the skills of information professionals in indexing systems, thesaurus construction, and user profiling for customised alerts. The inclusion of knowledge external to the organisation at the fourth stage of KM, is another opportunity for librarians to make a contribution to KM (Koenig, Michael ED 2005). To these, one of the interview participants suggested a further role for librarians. Referring to the emergence of the need for companies to quantify the value of their KM investments and arguing that the economics of information was another aspect of KM to which LIS could make a contribution.

“I think here is a huge opportunity for some of us to get together and try to develop some processes or some models that would allow a corporation to think about how it might value or evaluate these investments that they are making and any program that began to focus on that area I think would be very rich in terms of its contribution” (IP5).

6.4.2 User perspective

User needs analysis appeared among the most requested responsibilities for KM job applicants in Lai’s (2005) research. The need for LIS professionals to be skilled in the

art of anticipating and understanding user information needs is also widespread in the literature (Krivonos, Scheffel & Minassians 2005; Loughridge, Brendan 1999). As Higgins and Chaudhry (2003) remarked, fostering a user perspective is one of the main areas of focus among LIS faculties. Examining the curriculum in the School of Information Sciences at the University of Pittsburgh as an example, Lai (2005) found that various LIS courses contributed to helping students to be client focused and sensitive to users' information needs. The credibility of LIS professionals in this area was also highlighted in the interview data.

This, included references to such perceptions as that LIS people are quite ready to listen to what their users are saying (IP3), that they have a perspective that places individuals at the centre of the enterprise (IP7), and that they try to link information with people (IP9).

“Well, I believe that the thing that differentiates LIS from computer science is that historically LIS has tried to link information with people. And it's the people part of the equation that has made it a little bit different from computer science. Although interestingly; I have been reading about some changes that are now going on the computer science programs in this country to try to put the user into computer science, so to speak. The contribution that LIS makes, is critical to the study of KM which is not just about the gathering of information but how we organize and use it”(IP9).

And again:

“In my conversations with people from other fields; they have a very narrow view of information; whereas the LIS field has tended to have a much broader view and I think that's going to be an advantage ... The LIS students are the other ones who have the broad view that is required to understand the concepts involved in the management of Information; whereas some other students do not have the ability to handle both the practical aspect and the human elements. They are one side or the other. Whereas, I think we have both views; our history as librarians tells to us that there is no point in cataloguing that book unless somebody can find it and use it. So, we have the knowledge to organise the information; but we are organizing it with the user in mind, and I think that is one of the unique sense that our field has in our history that doesn't happen in most other fields when they talk about the management of information” (IP1).

According to IP11, librarians have a very good understanding of client information needs that could be applied to the business sector as well.

“I think that we also have a very good understanding of client information needs, analysing client information needs, not specifically in the business area. And I think, that’s where we would be weak with that one is, you know; a lot of people in our field probably don’t know the specific information needs of sales people, accounts people, so on. But we have got the techniques that are required for analysing that. And I think that’s why probably the commerce people would not understand that we actually have useful expertise” (IP11).

This view was shared by IP17:

“The perspective that our graduates as LIS graduates will get will not be quite the same as in the business arena. It would be very much user focus, understanding the clients, understanding the clients’ information literacy, abilities. So it’s not just putting the system in place and trying to sort of manage it. It’s actually looking, I mean; KM I believe is a culture of you know; sharing information and then believing in yourselves that you are going towards it, and so I suppose you know; what we trying to do is that without the user understanding of where they are going, it’s never going to happen successfully anyway”(IP17).

This is, in line with the views of Abell and Wingar (2005) who asked LIS people to recognize the value of their skills and see how they could apply them in a broader business context.

6.4.3 Knowledge sharing

While some would argue that librarians lack the techniques for extracting and sharing that knowledge which people hold in their heads (Jantz 2001), or again that sharing information and facilitating an environment conducive to knowledge sharing are among these aspects of KM that are not based in IM (Abell, Angela & Oxbrow 2001), some interviewees had a different point of view. For example, interviewee IP7 was confident that the networking abilities of LIS people would prove useful in helping them to identify and document the location of knowledge, not only in organisations but also as held by individuals. The willingness of LIS people to engage in knowledge sharing, and their contribution to this aspect of KM was mentioned by another interviewee:

“Librarians are very interesting people. They are; I would say the only people who are fully aware of and knowledgeable about the sharing of knowledge and the benefits of it. So, all they need is the appropriate training or courses that actually show them how to implement KM protocols and strategies in their work, and to engage with knowledge sharing and other issues” (IP3).

Further support for this view is reflected in the following quote:

“There are certain areas in which we have very genuine relationship with the KM concepts and topics...on sharing and on transmission and transfer and you know; social context of KM” (IP16).

6.4.4 Interest in learning

As the practice of KM frequently overlaps with the concept of the learning organisation, an understanding the knowledge dynamics of people including, the ways they learn has been advanced as a pre-requisite among KM specialists (Todd, RJ & Southon 2001). The enthusiasm for learning within the LIS community, both on their own part and in helping others to learn, has been noted by interviewees as another source of potential contribution to KM. The following quote demonstrates the point:

“People in library and information science have always been interested in learning, in knowledge development, in how we can as a profession assist people in you know; learning about a new topic and expanding their own knowledge about something” (IP2).

Additionally, information curiosity was considered by another interviewee (IP6) to be part of the LIS *mantra*, and something that could help them in the search for that tacit knowledge held in the heads of people. In this regard IP4 emphasised the tenacity of LIS professionals:

“We are suspicious... when we get answers; is that really the answer we should be getting out, are there other things that should be there? That’s why research more than one per thirteen; why research more than one database, or just why we look at more than one book... which is why we often pick up the telephone and call a friend and say, You know; I don’t; I’m still missing something. I don’t know what it is; but tell me...” (IP4).

6.5 The Need for KM Education

Realisation of the need for formal education in KM has caused LIS schools to respond to growing demands for provision. An indication of the importance of the need for such development is evident from both the survey and interview data.

6.5.1 KM courses at university level

The strong market demand for KM specialists in both public and private sectors, has encouraged universities to engage in education for KM, both in the form of standalone courses and of those that form part of other programs. The following quote from the literature demonstrates the point:

“Formal educational providers, in the wake of knowledge management consultants attracting substantial fees for professional development in the arena, have responded with the provision of formal professional education programs in the university sector” (Todd, RJ & Southon 2001, P.314).

Organisations other than universities have also realised the importance of growth in demand. Indeed, there is concern within the literature that if universities are not proactive in providing well qualified KM educational services, then consultancies and other private organisations may move in to fill the gaps in the market (Sutton, M.J.D 2002).

However, it has to be acknowledged that education for KM is still a relatively recent phenomenon and that, in the absence of formal courses, the first wave of knowledge managers has often lacked qualifications and /or has had to learn about KM while on the job. In response, a number of professional development and training programs have emerged, offering a broad introduction to knowledge management practice, its technologies, and including case studies of its implementation in a number of corporate environments (Todd, RJ & Southon 2001). However, the popularity of on-the-job learning remains strong. “The progressive shift within firms, from dependency on academically acquired knowledge to knowledge gained on the job is well attested to nowadays” (Psarras 2006, P.89). As KM is very much context dependent, some would argue that what is needed is practical experience rather than academic qualifications. This might also imply that KM education need not necessarily operate on the basis of full time courses, as Shurville et al. have remarked:

“Unfortunately, many otherwise suitable candidates for cross-training into KM already occupy mission critical roles. So their parent organisations simply can not spare them for a year of residential education. Moreover few can self-finance a year-long mid-career break. The demand among both managers and

organisations, then, is for education in KM that is both flexible and work-based” (Shurville et al. 2005, P.528).

Survey respondents were asked for their opinions on whether or not universities should offer KM courses on a full-time basis. Details of their responses are presented in Figure 6.2. It is interesting that opinion on this issue was divided equally between those who supported the call for fulltime courses in KM, and those who did not (%43.4). Only a minority of respondents failed to answer the question, or stated that they had no idea.

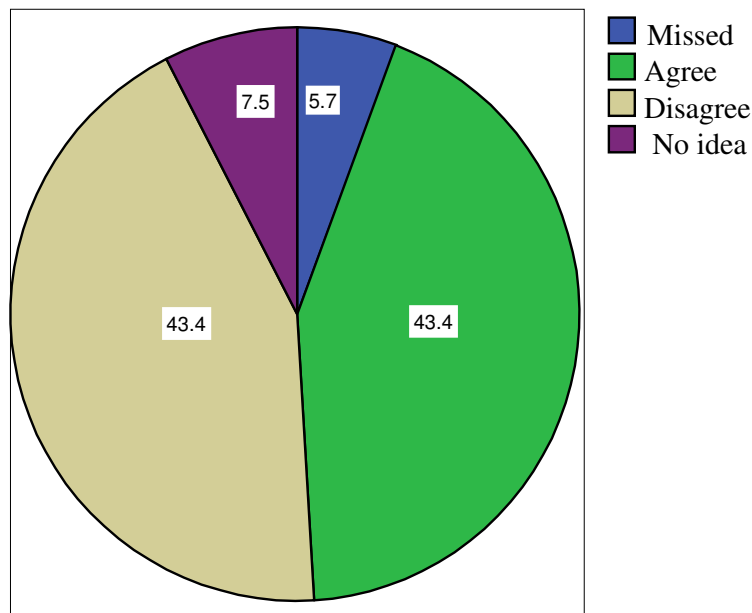


Figure 6.2 KM programs should mainly be offered as full time courses at universities.

The interview data however, was filled with arguments in support of offering KM education in the university sector. Among interviewees there was, however, one person who argued that KM education should be conducted in the industry sector.

“There are a number of private-sector Corporate Universities now teaching KM and they are becoming very successful. Universities in general don’t have the capability to change quickly enough to embrace new techniques and frameworks and then offer new material in the KM area. It normally takes 3 to 4 years to change a particular course or the curricula. This is too slow” (IP8).

6.5.2 Perspectives on LIS educational programs in knowledge management

The following statements emerging from the survey also underline the need for KM education in LIS programs.

a) KM should be a major priority for all providers of LIS education.

In respect of this statement 62.5% of respondents perceived KM education to be a major concern for LIS education providers. A relatively high percentage of respondents was also uncertain about this statement (21.2%) or did not agree with it (16.4%). This level of uncertainty or disagreement might be attributed to the fact that people still do not appreciate the strength of the argument for the involvement of LIS schools in KM education, or that they may recognize it, but not as a major element. As one respondent stated “I think all LIS programmes need something about KM, but the extent to which they need to cover it will depend on the nature of the programme”(QP).

b) To be effective knowledge workers, LIS professionals need to gain new skills.

As shown in Table 6.2 (P.156), a large majority of participants (93.3%) agreed that LIS professionals need to acquire new skills, if they want to engage effectively in KM. This perspective has been encountered in other recent research (Sarrafzadeh , Martin & Hazeri 2006). Within the literature, although there is endorsement of the value of traditional information skills for KM practice, there is also recognition that KM requires an expansion of skills among LIS professionals if they seek to play an effective role in this domain (for an example of such acknowledgment see Rehman and Chaudhry, 2005).

On the other hand, a small group of respondents (4.8%) disagreed with the perceived need to acquire new skills. Typical of these opponents, was a respondent who added the additional comment that: “Basically LIS professionals already have the skills and they just need re-naming to fit in with the current KM fad” (QP).

c) Knowledge-related competencies must be integrated into LIS curricula.

This statement was intended to shed light on the question of whether the major input to teaching KM should come from LIS programs or from other sources. It emerged that 95.2% (an overwhelming majority) of respondents, perceived the need to include the teaching of knowledge related competencies in the curricula. It is worth-noting that only 1.9% of respondents disagreed with this statement, with no respondent selected the '*strongly disagree*' category of this question.

d) LIS curricula need to address the cultivation of business competencies.

Since KM is very much business-driven, the literature points to the need for LIS professionals to acquire greater understanding of business, and of relevant economic concepts (Abell, Angela & Wingar 2005; Corral 1998; Koenig, Michael ED 1999; Lai 2005). Some 89.4% of participants agreed that LIS curricula should address the need to cultivate business competencies in their students.

e) LIS programs should help prepare graduates to play a wider organisational role.

A huge number of respondents (97.1%), agreed that LIS programs should promote organisational understanding among their graduates, leading to the conduct of wider organisational roles. The high level of agreement with this statement is possibly an indication of the interest within the LIS community in performing higher level organisational roles than those associated with the confines of traditional work settings. The importance of gaining a deeper understanding of organisational issues for knowledge professionals is reiterated throughout the LIS literature. For instance Southon and Todd (2001, P.16) maintain that: "It is clear that the phenomenon [of KM] implies a broader and more organisationally directed thinking on the part of information professionals if they are to engage successfully in this area" (See also (Krivonos, Scheffel & Minassians 2005).

f) LIS education needs to make a clear distinction between knowledge management and information management.

It emerged that 63.5% of the survey participants understood the essential difference between KM and IM, and considered LIS education as a basis for clarifying the distinction between the two. While the continued confusion between knowledge management and information management within the profession has been reported elsewhere (See for example Sarrafzadeh et al.(2006), it is nonetheless surprising that the significance of this distinction is not reflected within the education system for LIS. Hence, Hawamdeh (2003) points to the practice of relabelling existing information management programs, rather than the development of appropriate KM courses in the LIS sector. He argues that to develop new and relevant KM courses, it is necessary to understand the overlaps and distinguish the differences in the theories relating to information and knowledge. As has been observed by Todd and Southon (2001), there is a view reflected in the published literature that knowledge management is not the same as information management. The implication of such distinctions as they see it, is that formal education and training programs for knowledge management need to be responsive to overlaps and differences.

g) LIS educational programs need to focus on the management of internal as well as external knowledge.

A high majority of respondents to the survey (91.4%), drew a distinction between the management of internal and external knowledge within LIS education. Put differently, only 1.9% of participants did not see the need for such a distinction. This majority view indicates some movement away from the position reported elsewhere (Loughridge, Brendan 1999) whereby researchers were hesitant about involvement in the management of internal information, partly because in their professional education and previous experience they had concentrated on external sources of information, and partly because involvement in the management of internal information was perceived to offer little of value in terms of their own career development.

h) LIS programs need to focus on the management of both explicit and tacit knowledge.

The practice of knowledge management posits a broader view of knowledge, incorporating not only internal and external information, but also explicit and implicit knowledge. Hence, “A major feature of knowledge management theories is the stress on the necessity of the conversion of tacit to explicit knowledge” (McManus & Loughridge 2002, P.5). Therefore in this research, respondents were asked to comment on the question of whether LIS curricula need to address the management of both explicit and tacit knowledge. As can be seen from Table 6.2 (P.156), a high majority of respondents (87.5%) agreed with the statement. Interestingly, the level of disagreement with this statement was again low (7.7%), with no respondent choosing the option of ‘*strongly disagree*’. These findings compare with similar statements within the professional literature such as that which proclaims, “Library education would have to incorporate both tacit and explicit knowledge management” (Varaprasad 2006, P.1).

Accordingly, the findings of this part of the study indicate a shift of recognition within the profession towards the area of tacit knowledge, as has been noted:

“Explicit information – the expert area of the information professional – is clearly essential to the knowledge infrastructure, but it is only part of the picture. Knowledge is derived from expertise and ideas, and information specialists are moving into this area of tacit knowledge by catalysing the capture and sharing of important experience and expertise” (Abell, Angela & Oxbrow 2005, P.8).

i) Effective LIS programs will prepare graduates for work in KM teams; formed from various professional backgrounds.

88.2% of participants agreed that LIS programs need to prepare graduates for work in KM teams formed from various professional backgrounds. Only 2.9% of respondents disagreed with this statement. Interestingly, none of these respondents claimed to ‘*strongly disagree*’. This suggests that LIS professionals perceive knowledge management as characterised by team-working, and are willing to engage with other disciplines to implement KM. The LIS literature abounds with recognition of the multifaceted nature of KM, and of the importance of cooperation between different

groups in order to reach its goals. Hence, “KM... involves the coordination of a broad range of professionals and disciplines [and librarians should] develop their role in co operation with other professionals ...rather than competing in promoting their distinctive perspectives” (Todd, RJ & Southon 2001, P.322).

Table 6.2 Percentages of agreement/disagreement with statements that project parameters of LIS educational programs in respect of KM.

	strongly disagree	disagree	don't know	agree	strongly agree	Overall ¹¹ (mean)
a) KM should be a major priority for all providers of LIS education.	2.9	13.5	21.2	40.4	22.1	Agree
b) To be effective knowledge workers, LIS professionals need to gain new skills.	1.0	3.8	1.9	32.7	60.6	Strongly Agree
c) Knowledge-related competencies must be integrated into LIS curricula.	-	1.9	2.9	48.1	47.1	Agree
d) LIS curricula need to address the cultivation of business competencies.	1.9	1.0	7.7	57.7	31.7	Agree
e) LIS programs should help prepare graduates to play a wider organisational role.	1.0	-	1.9	42.3	54.8	Strongly Agree
f) LIS education needs to make a clear distinction between KM and IM	1.9	16.3	18.3	38.5	25.0	Agree
g) LIS educational programs need to focus on the management of internal as well as external knowledge	-	1.9	6.7	60.6	30.8	Agree

¹¹The following scoring has been designed for the purpose of marking the overall perceptions of respondents in section 6.5.2:

1 to 1.44= Strongly disagree

1.45 to 2.44= Disagree

2.45 to 3.44= Don't know

3.45 to 4.44= Agree

4.45 to 5= Strongly agree

	strongly disagree	disagree	don't know	agree	strongly agree	Overall ¹¹ (mean)
h) LIS programs need to focus on the management of both explicit and tacit knowledge.	-	7.7	4.8	57.7	29.8	Agree
i) Effective LIS programs will prepare graduates for work in KM teams; formed from various professional backgrounds.	-	2.9	8.8	44.1	44.1	Agree

Further support for the need for KM courses in the LIS curriculum emerged during interviews:

6.5.3 The need for KM in the new economy

The significance of KM education for LIS professionals in the context of an economy in which knowledge would be the major form of organisational capital, was understood by a number of interviewees. Hence:

“There is a need to make sense of the proliferation of data and information. And I think that’s the skill set that KM has, that very few other disciplines get. They know that the people making decisions don’t want the raw data. They want to synthesize knowledge of that data. And the ability to present that to the decision makers is going to be more and more important” (IP12).

And again:

“We see it as because of the way the economy is going” (IP18).

IP18 raised the issues of innovation and learning arguing that “We need to learn about how to learn for innovation”. Therefore “The circle of knowledge and innovation and sharing and creating and this whole thing about sustainability will still be important and for this KM education will still be required”.

6.5.4 The overlap between LIS and KM

As acknowledged throughout the literature, KM is a multi-dimensional discipline which overlaps with a number of other disciplines. The existence of some elements of KM in the LIS curriculum has already been discussed in this chapter (See section 6.3.2). Reviewing the core contents of KM and IM curricula in Europe, Widén-Wulff et al. (2005), argue that from the time that KM was introduced into the business world, its overlap with traditional library science, information systems, and, especially, information management was evident to academics within the LIS field. Recognition of the similarities between KM and LIS, also emerged in the interview data from current research:

“I really believe that pieces of the things that you do as a knowledge manager are very closely aligned with what you do in managing information in general”(IP12).

And again:

“It seems like a natural thing to offer KM education at the LIS sector” (IP2).

IP2 further argued that, although at the beginning there would arguments over curriculum content, after a while people would realize the need for change. Likewise IP4, when asked if she saw any particular reason why LIS schools would be doing KM, replied:

“Why not, it’s part of who we are. KM is just a fancy word for library things have been doing. I refuse to take a back seat”.

She points to the existence of some understandings among LIS people as their merits for KM achievement as she says:

“We understand what information is; and we understand the complexity of it; we understand the need to find access points...” (IP4).

6.5.5 The need for broadening the LIS domain

The need for the LIS profession to extend its scope beyond its traditional boundaries was perceived as a further reason for it to embrace KM education by the interview participants.

“I think that KM is one of the many tools [LIS] people can use to make sure that they are broadening their scope, they are really focusing on the mission of

the organisation rather than their little subset of skills of organizing information and making it accessible, and they are really looking at what are their broadening opportunities here and how can they really make a difference to help their organisation accomplish its mission... So I would say that KM should be part of how the entire program is looking so not much to reinvent itself but really trying to making well known what it does in terms of impact and the difference that they can make in an organisation” (IP7).

Such a need is also clear from calls for a broader focus in LIS courses, which is discussed in the next chapter (See section 7.4). Furthermore, the positive effect of KM education on LIS professionals’ horizons was attested by a majority of the survey and interview participants (See section 6.6).

6.5.6 The need to respond to the job market

As discussed in the literature review, the shift in market demands, and the emergence of new job opportunities for LIS professionals from outside the traditional library workplace, have motivated LIS educational providers to broaden the scope of their programs. Thus, as Hawamdeh (2005, P.1204) argues “Issues of professional education in knowledge management have been much debated over the past decade, as knowledge management is becoming an accepted business discipline, and organizations across industrial sectors are creating roles for knowledge work”. Such a need has also been highlighted in the business literature. In this regard, Bontis et al. (2006) claim, that more KM analysts and managers are hired and promoted, the perceived value of professional KM education increases. The need to respond to the job market was also acknowledged in the interviews.

“Because there are different kinds of openings for information workers, we feel that this is something that LIS people should know about it” (IP18).

And again:

“I don’t see that the jobs available in traditional libraries are going to grow all that much. But I have seen and I think it would continue to be that jobs that are not within a building that is called the library will be the ones that increase in number. Those areas are where the jobs are going to increasingly be located and I see our LIS programs as being the ones that are in the best position to offer courses that allow high level information managers to really contribute to society in those kinds of jobs” (IP1).

And:

“It really is dependent on the institution and what they see is as the market possibilities, I think. I suspect that KM is more than some other areas would be very much driven by market demand” (IP7).

6.5.7 The need to cater for wider audiences

The need for LIS schools to extend their programs to wider audiences also featured in the interview data. Hence:

“IM schools or Library schools ought to be providing for a wider audience and therefore; doing KM” (IP18).

And again:

“We don’t teach a lot of KM ... it is an area where we probably should increase the content, because we should be catering generically to all people that are going to work in a wide variety of positions in the workplace, not just to librarians...we have got a lot of people going in to government departments; where they would be doing a lot more; that would might be called KM” (IP11).

6.5.8 Interest in KM

The growth of interest in knowledge management in the LIS sector is acknowledged throughout the literature (Widén-Wulff et al. 2005), and is particularly reflected in contributions to conferences. The sheer volume of KM conferences, products and services and the prominence of KM themes in IM curricula, also demonstrate the growth of interest in KM theory and practice (Dunn & Hackney 2000). Investigating the perceptions of KM held by LIS professionals, Southon and Todd (2001) claimed that the high level of interest shown in KM suggests that it needs to be taken seriously as a necessary component of LIS programs. This has also emerged in the interview data, as further rationale for engaging with KM education. Hence:

“There is still a need for KM education, because people are still very interested in it” (IP2).

IP2 cited the number of meetings held by major LIS societies, and the numbers attending, as further rationale for engaging in KM education.

“We had a session, a couple of years ago at the American Society for Information Science and Technology Meeting; where we talked about teaching KM...why we do it through LIS. And there is another group, IFLA, the International Federation of Library Associations, and we are just getting a KM group starting there and I didn’t think there was a career years’ meeting

and saw career, but last year went to Oslo, Norway, and we had 250 people... So those connections are kind of keeping me confident that this is something we should be doing in a library curriculum” (IP2).

The foregoing participant refers to the increasing amount of research in this area as further indication of increasing interest.

“In the articles that I have in the book that’s coming out I used some statistical look at PhD thesis that has been written about KM and you know; it’s sustaining pretty well. So there is still a need for KM education, because people are still very interested in it” (IP2).

However, not everybody was of this opinion and as one interviewee remarked, “I am starting to feel, based on my experience at [my university], that KM should not be taught within the LIS curriculum at all. And the reason I say that is; at least in [here], the librarians or those who are learning library and information sciences do not seem to really be interested in knowledge management...I don’t think they have a chance to properly focus this area again. Many of the business schools will take the place of the LIS schools” (IP8).

6.6 The Benefits and Outcomes of KM Learning

It is always safe to bear in mind the possibility that people will lose interest in something if they can not see results. In the interviews this was acknowledged by IP14:

“It’s crucial; I think that people recognise that there is opportunity here by including knowledge management in the curriculum” (IP14).

The LIS literature, however, seems to be sparse in this area. Although there was recognition in Rehman & Chaudhry’s (2005, P.9) research with one respondent quoted as saying that “ Students cared more about bread and butter concerns and would care for KM courses only if they had the understanding what it might offer to them”.

It is obvious that in a new and emerging discipline like KM there still will be ambivalence among both LIS educational institutions and their students, as to the need to have KM courses. Investigating the benefits of engaging with these programs (should these exist) might help to clear up this ambiguity. Reviewing the literature, a

number of potential benefits of KM education for LIS professionals have been identified. The following statements (later reiterated in follow-up interviews) sought to clarify the perceptions of survey participants on these benefits. Below is a report of the survey findings, mixed with interviews’:

a) KM educational programs can help LIS professionals move beyond the parameters of their professional mindset and expand their professional insights.

As is clear from Table 6.3 (P.172), there was a high level of agreement (92.3%) with this statement (combining both *agree* and *strongly agree*) among the survey respondents. Grounded in the interview data on the benefits of KM education for LIS, was also the perception that KM could help graduates to acquire a broader view. Interviewee (IP5) referred to the transition that was occurring in the LIS industry, which was moving from the traditional focus on library services and the management of library institutions, to the provision of wider information and knowledge services within the organisation.

“The whole area of knowledge management begins to focus much more on the role of information and knowledge within organizations, that’s where we are focussed right now, versus the management of the institution library, which is really what the library science curriculum has focused on for the longest time”(IP5).

This idea that learning about KM could help LIS students to expand their conceptual/theoretical thinking beyond that of the library environment, is also reflected in the following example.

“There are elements of KM that I think require students to think differently from the way in which one might approach a straightforward library environment” (IP13).

IP13 viewed KM as an important part of management in general, and argued that learning about KM prepares students to handle management issues later in their work.

“I see benefits in terms of students’ understanding of management issues, and one of the problems with LIS programs is actually getting across important management ideas, because very often the students don’t have management

experience, and then maybe some years later they actually find themselves in a responsible management position. And so it's sometimes difficult for them to relate to management issues. I think KM helps them to think about problems in organisations and their problems in relation to the lack of communication or lack of collegiality and so on." (IP13).

A better understanding of information management has also been reported as one more benefit of KM education. As one survey respondent argued; "Inter-related understanding of one will improve understanding of the other" (QP).

There are calls throughout the LIS literature for information professionals to adopt a different mindset if they want to extend their horizons from information management to knowledge management. (See for example Todd and Southon, 2001; Abell and Oxbrow, 2001). In more general terms, it has been acknowledged by some scholars, that the fact of breaking new ground might in itself be significantly rewarding for LIS students (Dunn & Hackney 2000). Within the literature, however, other perspectives exist. The tendency of members of the LIS sector to gravitate towards and focus more on their professional groups than on broader environments has been recognised as a major barrier to the engagement of LIS professionals with knowledge management (Abell, Angela & Oxbrow 2001). As regards education, Koenig (1999) points to *the strong anti for-profit bias* of the profession as a cultural throwback, at least in the US, that still lingers in much of LIS education.

In research for this study, IP11 referred to the problem whereby the great majority of students who came into their LIS program, did so with the intention of going into traditional librarianship. This, the interviewee considered to be the result of weakness in program publicity, while nonetheless claiming some success in showing students that there were a number of ways in which they could use their qualification. He confirmed that the more generic nature of the program, the better their graduates were able to actually take what they have learned and apply it in a variety of ways.

"They [students] are actually taking what they learn in their programs and use it in a variety of ways. So yes, I am quite sure that they do benefit from the variety, and I am not saying all from specifically KM, but from the variety, the generic nature of the program" (IP11).

This potential contribution of KM programs is also reflected in the following quote:

“Some of our students do come in, with very much the fixation that they want to work in libraries. Through the course definitely their vision is broadened and a lot of them are interested in moving out further” (IP17).

b) KM education can encourage LIS professionals to become more value-oriented.

As a typical example of the earlier statement and since the ultimate goal of knowledge management is to promote value for organisations, this researcher was interested in finding out if the LIS community regarded KM education in any way as an accelerator for moving the profession from being service- oriented to being value- oriented. The findings indicate that nearly 60% of participants appreciated the potential of KM educational programs for strengthening value- oriented attitudes. A relatively high minority of respondents however (30.8%), remained undecided. The significant extent of indecision on this statement may well be the result of scepticism within sections of the profession as regards the ability of librarians to adopt a new mindset, the advent of KM education notwithstanding.

c) An association with knowledge-awareness will enhance the image of LIS professionals.

It emerged that 88.5% of respondents agreed with the effect of knowledge awareness on the enhancement of the image of LIS professionals. KM education was also perceived by a number of interviewees as an effective tool to project the value of LIS peoples' skills and understandings to the outside world. As IP5 argued, KM gives librarians the opportunity to demonstrate the higher and more effective use of knowledge outside libraries and in the process to show the value of LIS learning.

“As we think of enterprise wide services in corporations, we contrast this to the traditional role of libraries in corporations. So we think that KM represents the way of talking about how knowledge can be used outside of the library; but used effectively by applying a lot of the principles, a lot of the learning that we have from library and information science” (IP5).

This shift of focus was confirmed by IP1:

“Our graduates are hired in places where they can do a good job whether or not it is in the traditional library” (IP1).

To exemplify this, IP14 referred to the use of LIS knowledge in terms of information management and applying it to the organisational drivers.

“We brought more information skills into a more human position in a spectrum of organisational needs” (IP14).

As Southon and Todd (2001, P.1) point out “The [LIS] literature carries a key assumption that library and information professionals have an important role to play in knowledge management and, if anything, serves to stake a claim in the knowledge management territory, in part, as a vehicle for enhancing the professional image and role of the information professional”. Rooi and Snyman (2006, P.265) also refer to knowledge management as a means of moving beyond the traditional roles of the librarian, thus improving their image. They claim that “They need to gain management skills and business knowledge, because a lack thereof is amongst the main reasons discussed in the literature for the librarian’s low status and image by employers”.

d) Inclusion of a KM dimension in LIS education will contribute to an improvement in the self-image of LIS professionals.

Interestingly, 76.9% of participants perceived KM education as a vehicle for the promotion of self-image within the profession. Only a small percentage of respondents (5.7%) disagreed with this view. And this while, within the literature, the issue of self image has emerged as the main barrier to the holding of strategic positions by information professionals. To cross the boundary into the KM world, Abell and Oxbrow (2001, P.151) claim that “The change information professionals have to make is to think of themselves as part of the core business- not as a service to those who do the business”.

e) Acquisition of KM proficiencies will improve self-development skills.

71.2% of respondents agreed with this statement. A relatively high percentage of respondents (21.2%), however, felt unable either to agree or disagree with it. It could be argued that this group of respondents possibly lacked competencies in KM, or that they might not be confident about acquiring higher level self-development skills. Arguments within the LIS literature assert that gaining knowledge management competencies will help in the development of lifelong learning capabilities among professionals. For instance, Psarras (2006) refers to continuous improvement as a need in the workplace environment, and asserts that KM is driven by the need to achieve enhance continuous improvement among others.

f) Fostering KM literacy among LIS professionals will make them more aware of the value of capturing and recording their working knowledge and experience.

The growing importance of KM literacy, and the importance of capturing and recording their own working expertise, was acknowledged by a high majority of respondents (89.4%). Only a small percentage of respondents (5.7%) disagreed with the statement.

g) Increased understanding of KM will enhance self-management skills.

As knowledge management is arguably a valuable means of improving human resources management, it was deemed important to see what respondents thought about its potential impact on their self-management skills. As is clear from Table 6.3, 64.1% of participants agreed that such enhancement could accrue. A relatively high percentage of respondents however, (28.2%), was unable to respond categorically in this regard. This relatively high level of uncertainty could possibly indicate that the LIS community as a whole still lacks a clear understanding of the value of knowledge management. This value however, continues to be confirmed elsewhere with for example, Bontis, et al. (2006) arguing that their KM courses provide students with many opportunities to learn and to show their knowledge.

h) Engaging with KM practices will lead to higher collaborative abilities.

84.6% of respondents agreed that the practice of KM could improve collaborative capabilities among its practitioners. Only a small group of respondents (6.8%) disagreed. There is abundant literature in support of the majority view, with calls for multifunctional collaboration and/or collaborative working in achieving KM goals (See for example Abell and Oxbrow, 2005).

i) Promoting KM awareness among LIS professionals will improve their ability to be effective team players.

Nearly two thirds of participants (64.4%) agreed with the above statement. A sizeable group was unsure about the argument (22.1%), while 13.4% disagreed with it. It is hard to understand why those respondents who, elsewhere, appreciated the collaborative nature of KM, and the impact that effective LIS programs could have on preparing graduates for work in KM teams, still to a considerable extent (35.5%) failed to accept the argument that KM-literate LIS professionals could be effective team players. Although there are calls within the professional literature for the need to see ourselves as merely part of the so-called KM solution and familiarise ourselves with the other players and potential collaborators (Ferguson 2004), the findings in this research still suggest that a lack of self-confidence within the profession continues to be a big hurdle in higher level involvement with KM initiatives.

j) KM education can help LIS professionals to respond more effectively to their users' needs.

It is hardly surprising that a major percentage of participants (72.1%), agreed that an education in knowledge management could enable graduates to respond more effectively to the needs of users. Indicative here was an additional comment from a respondent who said "I am a librarian in a special half- person library. KM could provide me with better management skills overall to deliver more efficient service" (QP).

A relatively large percentage of respondents (20.2%) however was uncertain about the statement. The justification for such uncertainty might be that KM education is

still relatively new, and that it will take time before its real impact, particularly in the sphere of practice, is clear.

k) KM educational programs will help LIS professionals to broaden their sphere of influence, by preparing them for involvement in a wider range of activities.

Knowledge management encompasses various forms of knowledge assets, and covers a wider area of activities other than information management. The inclusion of this statement was intended as a means of testing the perceptions of respondents on the likelihood of KM impacting positively on LIS. It emerged that a large majority of participants (88.4%), recognized the possibility of such an enlargement. The remainder of respondents however, either had no opinion on this issue (6.8%), or in a few cases disagreed with the statement (4.8%). The literature has relatively little to say about this matter, although a lack of self-expectation among librarians in helping to meet the management as opposed to the research and teaching needs of academics, was reported in a study of the management information needs of academic heads of department in the UK universities (Loughridge, Brendan 1996). Interviewing 44 Heads of Department, 19 Senior Administrative staff, and Directors or Heads of specialised units, and 16 Librarians, one of the main objectives of this study was to examine perceptions of the nature and range of information services/support that libraries provided for managers to help them to perform their duties, such as management of resources, maintenance and development of external links, response to external demands, attracting students and repositioning their department in the market-place. The findings revealed a view pervasive among participants including heads of departments and librarians, that libraries played a minor role, if any, for libraries in the provision of management information.

l) KM education can help LIS professionals to align more effectively with the objectives of their parent organisation.

The need for information professionals to demonstrate their relevance to the objectives of their parent organisation has been emphasised throughout the literature (For example Butler, 2000; Hawamdeh, 2003). This statement above sought to examine the contribution of KM education in this regard. Interestingly, 75% of

respondents perceived KM education as an aid to the more effective alignment of LIS graduates with organisational goals. The remainder, 18.3% were hesitant to select either the *agree* or *disagree* options. KM education has helped to increase the understanding of the nature of organisations among business students, as identified in the results of Bontis et al.'s (2006) survey of 43 alumni of a KM course at the DeGroote School of Business, McMaster University, Canada. According to their findings, business alumni recognised a link between KM courses and their job or career, through a better understanding of three related aspects namely, organisational performance outcomes, human resource management and technological issues.

m) Embracing KM in LIS education will enhance the position of LIS professionals in their workplace.

73% of respondents perceived the inclusion of KM in LIS education as a significant factor in the enhancement of the position of LIS professionals in the workplace. Surprisingly, a relatively large group of respondents (22.1%) answered '*don't know*' to this question. The very small range of disagreement with this statement (4.8%) however, may be a reflection that the LIS community at large has seized the impact of knowledge management on leveraging LIS professionals' job postings. Although some may believe that this would have occurred without the factor of KM education, the potential of knowledge management for raising the status of the profession within organisations, has also been affirmed within the LIS literature (Dunn & Hackney 2000; Southon, G & Todd 2001). And on a different but related issue according to Dunn and Hackney, "Inadequate teaching of KM will almost certainly leave individuals with a competitive disadvantage" (Dunn & Hackney 2000, P274). The benefits of KM education as regards the conduct of new roles and responsibilities by LIS graduates are reflected in the following quote:

"I had so many students come back from both communication and LIS telling me; Oh! You know, I really am using this now. I got a job and they all seem to need that KM, I was the only one in my department who knew about it. And so, you know it's really helping students" (IP2).

The perceived advantages of KM education are not of course confined to the LIS domain, with for example Bontis et al. (2006) confirming the usefulness of KM

education for business graduates in the workplace, giving them a competitive advantage over their colleagues.

n) KM education can provide LIS graduates with new career options.

Some 94.2% of respondents recognised the potential of KM education for helping to provide LIS graduates with new career options. The high level of agreement with this statement, both here and in previous research (Sarrafzadeh , Martin & Hazeri 2006), would seem to indicate that the LIS community is aware of the career benefits of learning about knowledge management. The value of adding new dimensions like KM to LIS programs for professional career development was also recognised by a number of interviewees. In this regard, IP11 for example, explained that many of their graduates had gone to the corporate sector, and had occupied non- traditional librarianship jobs like, for example in, web content management or electronic publishing, and confirmed that graduates had benefited from the variety in their programs.

“Within two years of graduation, probably only about half of them are still in one of the core traditional librarianship job; many have gone often to the corporate sector where, you know the job titles are many and varied” (IP11).

In addition to the above, KM was perceived by other interviewees as an opportunity for LIS professionals to find new roles and responsibilities, and to open up a new job market for LIS graduates. In another example, IP14 refers to the inclusion of KM in the LIS curricula as an aid to help LIS graduates to move into new jobs outside the library sector and in the process to earn significantly higher salaries. IP16 also points to the opportunities that KM brings for LIS graduates to enter non- traditional roles in the corporate world.

There is ample research-based support for the emergence of new career roles, and new prospects for information professionals within the literature. For instance, Abell and Wingar (2005), consulting over seventy organizations in 2004, identified a number of role groups that illustrate the new career paths for information professionals including: Knowledge Facilitator, Knowledge Specialists, Knowledge Strategists. Reporting from a survey of practitioners in the library, information management, records management and computing industry sectors, Brogan and his colleagues

concluded that “Attitudes to KM were positive suggesting that many information professionals regard KM as durable, see themselves in KM activities and see career benefits in learning more about KM” (Brogan, Hingston & Wilson 2001, P11).

o) The inclusion of KM can potentially enhance the status of LIS education.

Interestingly, 88.4% of respondents perceived the inclusion of KM programs to be a likely driver in promoting the position of LIS education. The remainder of responses was divided equally between the ‘*disagree*’ or ‘*strongly disagree*’ and ‘*don’t know*’ options in the question. There are also signs within the literature that KM can help to broaden the appeal of LIS programs for a wider group of potential students to the expansion and enrichment of LIS education (See for example Tang, 1999). As for the interviewees, IP16 claimed that “LIS schools have been very shy and timid in their outlook and their interaction with other counterparts on campus”. He argued that the inclusion of KM education could provide LIS schools with a good opportunity for outreach. Furthermore he argued that LIS schools could employ the interdisciplinary nature of KM to interact with other disciplines and exploit the knowledge of other disciplinary areas to enrich their programs. He further added that KM education could make a significant contribution towards faculty development stating that; “We can develop our faculties along the lines, we can enrich our faculties and we can diversify our faculties’ expertise and competencies”. Clearly, this expansion of staff knowledge and experience could lead to the promotion of LIS programs.

p) The inclusion of KM programs could help LIS education to reduce the risk of becoming irrelevant.

Nearly 70% of participants recognised the potential of KM programs for reducing the risk of LIS education becoming irrelevant. Some 12.5% of respondents however, disagreed and a further 17.3% was uncertain. The relatively high level of agreement here can be interpreted as indicative that LIS schools need to consider the inclusion of KM in order to help them keep abreast of with current developments in the wider information environment. Hence; “In order to survive and thrive in an increasingly competitive educational marketplace, it is necessary to re-examine the approach to information studies education and take into account the changes in technology and the shift toward the knowledge economy” (Hawamdeh, Suliman 2003, P.159).

Table 6. 3 Benefits of KM education for LIS professionals.

	strongly disagree	disagree	don't know	agree	strongly agree	Overall ¹² (mean)
a) KM educational programs can help LIS professionals move beyond the parameters of their professional mindset and expand their professional insights.	1.0	1.0	5.8	38.5	53.8	Agree
b) KM education can encourage LIS professionals to become more value-oriented.	2.9	5.8	30.8	37.5	23.1	Agree
c) An association with increased knowledge- awareness will enhance the image of LIS professionals.	1.9	1.9	7.7	46.2	42.3	Agree
d) Inclusion of a KM dimension to LIS education will contribute to an improvement in the self-image of LIS professionals.	1.9	3.8	17.3	42.3	34.6	Agree
e) Acquisition of KM proficiencies will improve self- development skills.	1.9	5.8	21.2	40.4	30.8	Agree
f) Fostering KM literacy among LIS professionals will make them more aware of the value of capturing and recording their working knowledge and experience.	1.9	3.8	4.8	54.8	34.6	Agree
g) Increased understanding of KM will enhance self-management skills.	1.0	6.8	28.2	40.8	23.3	Agree
h) Engaging with KM practices will lead to higher collaborative abilities.	1.0	5.8	8.7	52.9	31.7	Agree
i) Promoting KM awareness among LIS professionals will improve their ability to	1.9	11.5	22.1	41.3	23.1	Agree

¹² The following scoring has been designed for the purpose of marking the overall perceptions of respondents in section 6.6:

1 to 1.44= Strongly disagree

1.45 to 2.44= Disagree

2.45 to 3.44= Don't know

3.45 to 4.44= Agree

4.45 to 5= Strongly agree

	strongly disagree	disagree	don't know	agree	strongly agree	Overall ¹² (mean)
be effective team players.						
j) KM education can help LIS professionals to respond more effectively to their users' needs.	1.0	6.7	20.2	40.4	31.7	Agree
k) KM educational programs will help LIS professionals to broaden their sphere of influence; by preparing them for involvement in a wider range of activities.	1.9	2.9	6.8	51.5	36.9	Agree
l) KM education can help LIS professionals to align more effectively with the objectives of their parent organisation.	1.0	5.8	18.3	44.2	30.8	Agree
m) Embracing KM in LIS education will enhance the position of LIS professionals in their workplace.						
n) KM education can provide LIS graduates with new career options.	1.0	1.9	2.9	39.4	54.8	Strongly Agree
o) The inclusion of KM can potentially enhance the status of LIS education.	2.9	2.9	5.8	47.1	41.3	Agree
p) The inclusion of KM programs could help LIS education to reduce the risk of becoming irrelevant.	6.7	5.8	17.3	39.4	30.8	Agree

In support of the above statements a further theme has also emerged from the interviews. Learning about KM has been perceived as a way to help graduates to perform better as corporate librarians. Hence, according to the following interview participants:

“One possible benefit obviously is that those students who do work in the corporate environment may find it easier to contribute in any KM initiative that their organisation undertakes. So in terms of preparation for that corporate environment, I think there is a benefit” (IP13).

And again:

“My sense is that most of the people who graduate from our program or programs like ours to involve in KM really started out as a, you know the corporate librarian and so are playing an important sense to move into that area” (IP7).

Finally, within the findings of this research there was recognition of the need for LIS professionals to perceive the benefits they can get from KM education. Here, a comment from the survey is worth noting. As a respondent stated that; “I have ticked *agree* to all of the above in the naive hope that these statements will prove to be realized over time!!” (QP).

6.7 Conclusion

A review of the literature indicates that education for knowledge management is a matter of interest to a number of disciplines and professions. It is also clear from the present research findings, that this includes the LIS professions, not least owing to the evident links between LIS and KM and the distinctive characteristics of those LIS people occupying KM posts. There is also an increasing realisation of the need for KM education in the profession, and an appreciation of the benefits and outcomes this could provide. Hence, KM remains a topic of considerable interest to the LIS professions, despite stubborn opposition from a minority opposed even to the idea of KM.

Within that majority of LIS professionals not opposed in principle to KM, is an equally committed group who see the possibility of a major contribution for LIS professionals to many aspects of KM. While there could be an element of self-deception in some of the more enthusiastic claims for this contribution, it seems clear that key skills in information organization, retrieval and analysis, as well as in working with users, along with a tendency to engage in learning and sharing, continue to be positive attributes for LIS professionals engaging in KM. Indeed, the LIS professions, if not unique in their reservations about this subject, may be somewhat rare in displaying a less than total commitment to its colonization. From the findings of this study, it became evident that the LIS community is seeking to expand its domain into a wider professional environment than that of traditional libraries, and that it sees KM as an effective opportunity to help it reach this goal. According to the findings of this research, therefore, KM is totally relevant to LIS, is not altogether new, and can significantly assist the profession to stay current and to move along the information-knowledge continuum.

Chapter 7 : KM in the University Sector

7.1 Introduction

As discussed in the literature review (See section 2.5) KM first emerged in the industry sector, and after some time found its way into the academic sector. The appearance of KM education in academic institutions therefore, is quite recent. Since there are divergent perspectives on what KM is across different domains or even within specific disciplines, its education has been treated differently from one place to another. The need to match KM programs to particular situations and to the various educational needs of students from different backgrounds, and to match educational opportunities with the needs of organizations and markets is recognized in the literature (Todd, RJ & Southon 2001). In the interviews conducted for this research, interviewees were asked whether they perceived KM as being basically the same subject, whatever the professional domain, or whether it should vary with the nature of the program such as in Business or LIS courses. Figure 7.1 illustrates further themes and topics discussed in this chapter.

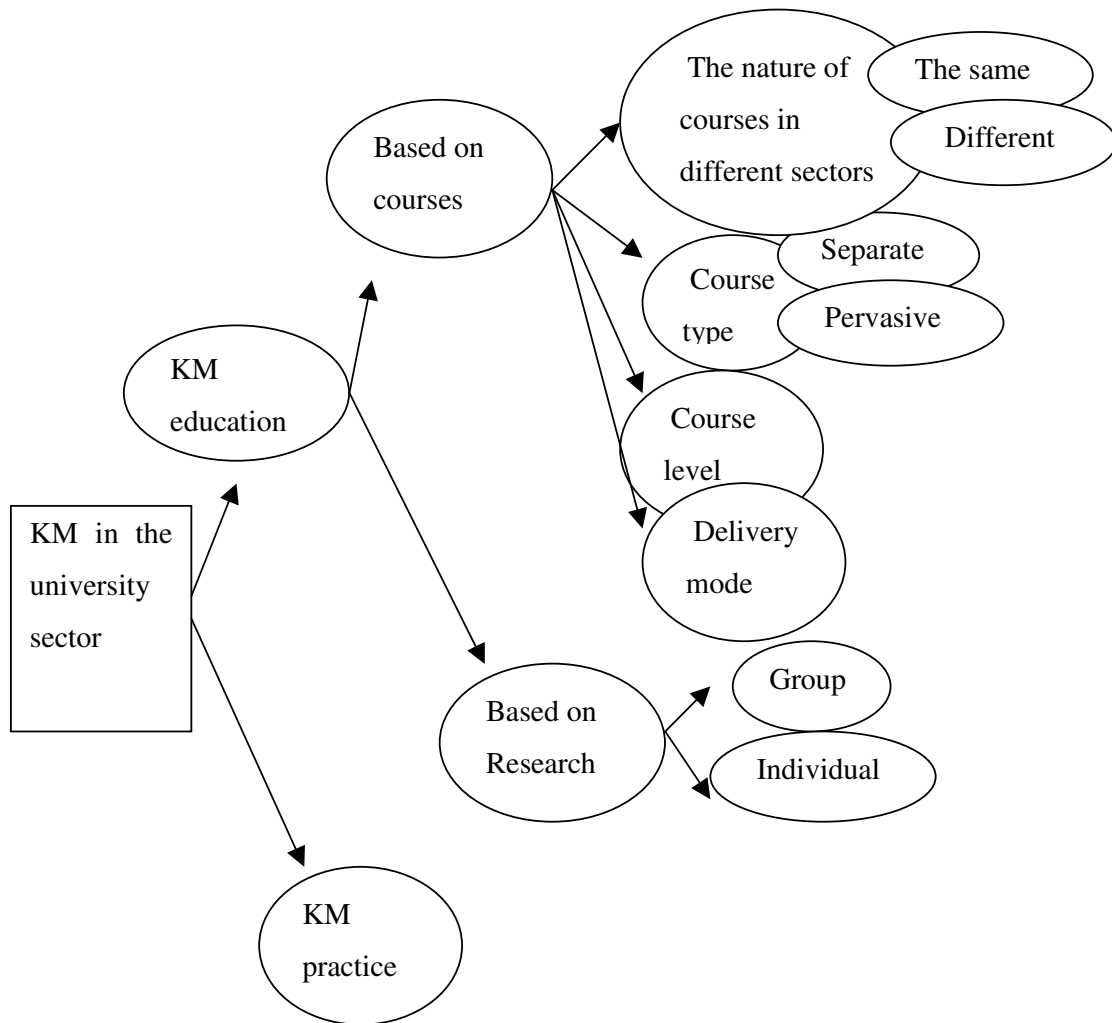


Figure 7.1 Themes that emerged in discussions of KM in the university sector.

7.2 The Nature of KM Educational Programs in Different Sectors- the Same or Different?

Although some of the interviewees (IP1, IP13) believed that KM should be basically the same subject whatever the professional domain, others thought it should be regarded as domain-specific, and influenced by peoples' perspectives or in the words of IP1, by perhaps its different applications. The influence of perspectives on current KM course offerings is reflected in the following quotes from interviewees:

“I think that others might have a different definition and they may in fact offer something that they think is KM, but not by the definition that I have provided” (IP7).

“If knowledge management is taught in a business school it would probably have more of an organisational behaviour perspective to it; if it is taught in a library school it would probably have more of the taxonomy and ontology perspective, if it is taught in a computer science school it would have more of the infrastructure and tools approach”(IP8).

“I think that what LIS graduates or students are doing is quite different from what the students in a business school are doing as they use KM in marketing classes or they use KM in other kinds of courses that are more directly involved with manipulation of knowledge for profit which is what business is about”(IP1).

“Well the thing is that whenever KM coursework is to offered it is going to be some special identity or orientation in the way these courses are offered ...so they are going to be different and they ought to be different”(IP16).

Despite the above comments, however there was an overall feeling among interviewees that KM programs should be more inclusive, in order to address all aspects of the topic. This view is reflected in the following example:

“I would suggest that students in any school; say in library science for example, they won’t be able to be effective knowledge workers if they do not fully understand all the legs of KM...and for that reason they need an integrative approach”(IP3).

Although different sectors might take different perspectives on KM, this does not mean that they should offer distinct courses for their own domains. Rather any differences should stem from the different needs of students (from different backgrounds), and the importance of all students gaining a holistic understanding of KM. This interpretation is evident in the following quote:

“Given the nature of the different program in which it is taught; you mentioned business and LIS courses and of course there are also IT courses; you are going to have to assume different knowledge. So for example, IT people won’t need to do a lot of work on internet and portals and so on and people in the business course won’t need to spend as much time in looking at statistic aspects of KM compared with the LIS students” (IP13).

7.2.1 The need for specialization in KM programs

It is worth noting that among the interviewees there was a perception of KM as being quite a large area, with different components such as the human resource component, data mining, systems development, the learning aspects, and knowledge and its philosophical approaches. As a consequence, IP10 argued that LIS schools might need to select one or two areas of strength for their programs. The wider literature, however, supports the need for KM education to promote a generalist perspective, and take a holistic, broad-spectrum approach, allowing students to formulate their understanding of KM in the context of their personal needs or experiences (Bontis, Nick, Serenko & Biktimirov 2006; Chaudhry, AS & Higgins 2004).

7.3 The Status of KM Programs/Courses in the LIS Sector- Separate or Pervasive?

KM education within the LIS sector has also been conducted differently from one school to another. Some schools have provided separate KM programs, or have integrated KM with IM as a dual program. Others include some KM courses in their current programs, or simply introduce KM as a subject within other modules. To identify the viewpoints of interview participants in this regard, they were asked if they saw KM as being a separate subject within the LIS curriculum or something to be taught in pervasive fashion, say in content management or information retrieval. The relevant responses follow:

7.3.1 KM programs/courses- separate

There was an acknowledgement within the interview data that having a separate KM program would be very important in the near future. Hence:

“I can see in the future where it would be very important to have a second separate track” (IP12).

The importance of having a separate KM curriculum for those who want to work in non-traditional library settings like insurance companies and large banks, was mentioned by another interviewee.

“I think depending on where you are going to place your students; KM as the separate curriculum is very important.”(IP12)

However, from an administrative point of view this, as noted by another interviewee, is not always possible.

“Most LIS schools are too small to have a complete separate program and it is just going to be window dressing and it is not really a separate program”(IP1).

7.3.2 KM programs/courses - pervasive

The need for the LIS curriculum to embrace KM in a pervasive fashion was emphasised by many of the interview participants. For some of these people, KM was not a separate subject, but was really something that central to the LIS curriculum. Hence:

“I would see that not as a supplementary or a single course, but really core to what we do” (IP7).

And again:

“I wonder if KM really exists as something separate...KM seems already being included within our curricula and I don't see how it can be separated out... the terms [KM] and their meanings occur in many ways. KM is really quite pervasive” (IP1).

IP1 provided some examples of where KM components were included within LIS courses, including courses in collection management, database creation, web design, and story telling, and argued that many LIS courses included elements of KM. She further observed that her own courses went well beyond the library field with regard to the scope of the knowledge they embraced.

“I teach a course in intellectual freedom and censorship and I make a point of trying never to say the word ‘library’ in that course and it's not a library course; it is a course on intellectual freedom and censorship. And we may as the course progresses talk about applications of that knowledge to various fields; one of which is the library field, but only when introducing the course and introducing the concept. Thus I'm teaching something that is very broad

and so I think we already do this in many of our courses. Many of our colleagues in all of the world do this.”(IP1).

IP12 also notes that because of the similarities between the two areas, it is very easy to incorporate KM into a traditional LIS curriculum.

“You can incorporate KM into a traditional LIS curriculum very easily. Because many of the tools in much of the discipline are equal to what we already talk about in LIS. In my school it’s incorporated into our information retrieval and our information management and even on management courses. So as is information architecture” (IP12).

The need to embed aspects of KM within the LIS core curriculum, was recognised by IP13, who was of the opinion that elements of KM should be included in all courses. He supplemented this point by adding that some of the interpersonal and group works associated with KM would have to be taught as part of a more general management subjects. IP13 noted the existence of many demands on the LIS curriculum and the challenges of adding KM as extra subjects within existing units particularly for postgraduate courses:

“Often that when something is new is taught as a separate module; so for example when information technology started to have strong impact on library work and library practice a lot of library schools started teaching it as a separate component within the programs and since then a lot have gone over to integrating IT into the other core areas of knowledge and that maybe what we’ll have in KM” (IP13).

IP16 believed that KM not only should be offered as a separate program, but also that it would influence the whole LIS curriculum. So the whole LIS curriculum should be revised with regard to the breadth of the KM concept.

“Well, I think that it needs to be taught in both ways. It has to be taught as a distinct coursework of KM and there are a number of courses that need to be taught and that ought to be taught within LIS programs... But at the same time, we have courses in LIS programs, two of the courses that you have mentioned, content management and information retrieval. I believe there are other courses as well; knowledge organisation could be one of those courses. Also information architecture could be another course. The course could be interfaces, creation of interfaces, courses we are offering about other similar utilities. These are all KM enablers. What we can do is that in these courses

we can provide a much needed orientation that is appropriate coverage of KM in those courses”(IP16).

7.4 The Need for a Broad Focus in LIS Courses

In addition to the above categories, what emerged from the interview data was an emphasis on the need for a broad focus in LIS courses. There were indeed, many calls for a wider focus in LIS courses, and for increased focus on the corporate information sector. In this regard, one criticism from an interviewee was that:

“Some of our core courses are still too library focused and I would like to call them to be more generic” (IP11).

As a result for example,

“Reference courses today need to be jacked up. I think they need to be far broader in nature, I think they need to be far more rigorous, to basically go beyond that rigorous while I consider the traditional sources that were going used to reference”(IP4).

More specifically in the area of knowledge management, IP13 pointed out that the LIS courses needed revision, with elements of KM being added to all courses. The need for curriculum expansion was also advanced by IP14. According to him a ‘traditionalist curriculum’ was probably too narrow to encompass all of the enablers of KM, or even if they could be found in the current curriculum, they need to be studied at a deeper level or through different lenses.

This kind of expansion, seems to be happening. Drawing on the contributions of interviewees, it is clear that to an extent, LIS courses are now much broader, and that they teach about knowledge that goes beyond library settings. Hence:

“In the library management unit, I don’t concentrate on library administration and process... So brings in you know, a lot of the management concepts of human resource management, organisational culture and all that sort of stuff” (IP6).

And again:

“I think we actually cover a lot of territory without bagging it KM, so say that the principles come out through a number of different units” (IP17).

In line with the above interviewees IP11 also referred to the introduction of new courses like business information, and confirmed that they have areas like human resources, organisational change, strategy or culture in their management courses but he added “I don’t know if we teach them with the sort of depth that would go on to become useful as KM tools” (IP11).

There was also a reference (from IP7), to the recent movement of LIS schools to new organisational homes, including areas like communication, journalism, education and business. Furthermore, the emergence of a new category of schools in the US known as *I-schools* could be an indication that LIS schools are seeking to expand their scope beyond traditional librarianship, while not entirely abandoning librarianship. According to the American interviewees (IP1, IP4, IP7, and IP9) there is indeed, no significant difference between this cluster of schools and those still known as LIS schools, given that LIS schools have already included information science in their curriculum, and the I-schools on the other hand, have LIS degrees in their portfolio of programs. Indeed IP7 spoke dismissively of I-schools as being *the flavour of the month*. The creation of this dichotomy in schools may partly have been in response to a desire to get rid of the L word. The only significant difference between the two detected by interviewees, was that I-schools are more typically located in research universities. To some interviewees, this name change however, was no bad thing.

“Dropping the L from the library, it’s probably a good thing. Because the business community, generally the world in general; I don’t think is ever going to be able to get past the stereotype of the librarian and whatever they think a librarian is...So we have to continue to divorce ourself from the library building which I think in reality we have divorced ourselves from but other people just seem to be unaware of that” (IP1).

The above findings generally suggest the need for LIS schools to respond to the opportunities presented by KM education. Further support for this response is reflected in the following themes that emerged from the quantitative and qualitative data collected in research for this thesis.

7.5 *Level of KM Courses*

KM programs have mainly been offered at the postgraduate level. However there are signs that it is expanding to feature at undergraduate level as well. This is clear from the findings of Rehman & Chaudhry's (2005) research into the perceptions of the heads of 12 LIS schools in North America, Europe and the Pacific region. The results of their study reveal that 7 of the 12 LIS programs then had graduate-level degrees in knowledge management. Two of these schools had a graduate diploma in KM, and three of them had KM components in their undergraduate courses. Rehman and Chaudhry reported that "One head made it a point that KM could not be appropriately taught at the undergraduate level and needed to be offered only at the graduate level" (Rehman & Chaudhry 2005, P.9) Elsewhere, the management aspect of KM programs has been cited as a reason to offer KM programs at graduate level (Bontis, Nick, Serenko & Biktimirov 2006).

In the survey conducted for the present research, respondents were asked to indicate the level at which they thought full time courses should be offered. The majority of respondents to this question (94.3%) opted for post graduate degree courses. More than half of respondents (56.6%) opted for undergraduate degree courses, while just 35.8% of them opted for non-degree programs. On the issue of support of KM courses at the graduate level, one participant stated that,

"I believe KM education has to be at the graduate level. To understand KM, students also have to understand organisations and how they work, and very few undergraduates have this understanding. So often KM (and other management courses) go over their heads and rather than an education, we end up giving them a qualification even though they haven't understand great swathes of the course"(QP).

Half of the participants in the survey responded to this question. Despite being given the option not to do so, should they not be in agreement with the teaching of KM on a full-time basis at universities. Further analysis indicates that almost 11% of those people who announced their disagreement with the statement or appeared to have no opinion on it, answered this question. This might indicate that these people probably

agreed with offering KM courses at universities, but not on a full-time basis. The following quotes make this point:

“I think they should be available mainly as part-time courses at educational institutions, because it is more relevant for people to do it while they are working, so that they can apply what they have learnt and use the workplace for their project assignments. This is what I did in my KM studies at the University of SA” (QP).

“ I do not necessarily think that full-time courses are the only option; it may also be offered as a major or specialisation within other courses in source disciplines such as information systems, information technology and information management programs among others”(QP).

Table 7.1 Preferred level of KM courses.

		Responses		Percent of Cases
		N	Percent	
Level	Undergraduate degree courses	30	30.3%	56.6%
	Post graduate degree courses	50	50.5%	94.3%
	Non-degree courses	19	19.2%	35.8%
Total		99	100.0%	186.8%

Case Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Level	53	50.0%	53	50.0%	106	100.0%

7.6 Program Delivery Modes

The rapid advance of technological developments within the last few decades, has influenced the educational configuration of academic programs, brought about the expansion of new degrees in distance or distributed learning environments, and promoted the adoption of new delivery formats alongside existing forms. In LIS education, the adoption of these new delivery modes has led the emergence of wider

audiences (Logan & Hsieh-Yee 2001). As each delivery format has its own merits and drawbacks, the researcher sought to figure out which KM program delivery mode the survey respondents preferred. As Table 7.2 shows, respondents to this question indicated strong preferences for 'Mixed mode delivery' (combining distance and face to face delivery) and 'Traditional face to face' mode, with only a modest percentage favouring wholly electronic delivery. The relevance of tools and techniques used in the distance learning environment for KM education was underlined within the interview data. This was thought to expose students to different technologies, to show them the differences between for example, the management of traditional library resources and electronic recourse management, and to help them to learn about things like work flow management and document management. The following quote makes the point.

“We are teaching that in distance learning environment. So in a sense some of the tools that we are using already have some relevance in the KM environment. For example, we use of online forums and where students can post messages to the lecturers and to each other and on occasion even do some joint work together” (IP13).

In this vein, IP15 also refers to the existence of a good electronic online learning environment at their university and remarks that “Our students use increasingly sort of online assignment in virtual space and they practice what we teach a little bit in using online communities and building communities across that virtual space” (IP15).

The above evidence therefore, can be interpreted as a belief that while the merits of distance education have been recognised, face-to-face education still remains popular. As a result, the findings support the option of mixed mode delivery for KM programs, with the combination of both distance and face to face modes.

Reviewing the literature, the impact of using mixed delivery modes in successful KM programs has been underlined in Shurville et al.'s (2005) report of a specific case. Referring to the use of blended modes of teaching at workshops and via the Blackboard Virtual Learning Environment (VLE) for the delivery of an MSC in Knowledge Management Systems at Cranfield University in the UK, they argue that e-learning components support the re-use and re-branding of learning materials, as

well as the capacity for personalisation. Shurville et al. further underlined the use of mixed mode delivery as a positive contributor to the success of their program. It is also interesting to see that very little preference was expressed by survey participants for ‘Mobile learning (via mobile phones)’ which has been promoted as a helpful way of learning in the workplace.

Table 7.2 Percentages of preference of program delivery modes.

	No Preference	Slight Preference	Preference	Strong Preference	Overall (Mean) ¹³
a) Traditional face to face	11.9	19.8	31.7	36.6	Preference
b) Electronic classroom-based	21.9	40.6	21.9	15.6	Slight Preference
c) Electronic distance education (including web-based delivery)	22.1	37.9	26.3	13.7	Slight Preference
d) Mobile learning (via mobile phones)	85.7	9.9	1.1	3.3	No Preference
e) Mixed mode delivery (combining distance and face to face delivery)	13.9	17.8	29.7	38.6	Preference

¹³ The following scoring has been designed for the purpose of marking the overall perceptions of respondents on mode delivery presented in Table 7.2 :

Means:

0 to .44= No Preference

.45 to 1.44= Slight Preference

1.45 to 2.44= Preference

2.45 to 3= Strong Preference

7.7 KM Research

KM education in universities need not necessarily be tied to course work. It may also come about through research programs. Within the literature, there are references to a number of universities taking part in joint research programs with, or on behalf of industry (Corrall 1998). To identify the extent to which LIS schools are integrating research into their educational systems for KM, interviewees were asked if they are aware of any research project involving LIS schools or students. The following themes emerged from:

7.7.1 Individual research

Most of the interviewees referred to the conduct of individual research by either PhD or master students. The topics mentioned included KM and outsourcing, KM practice, knowledge strategy systems and knowledge auditing. Hence:

“How is the knowledge that is embedded in the whole company, how people in outsourcing companies develop that knowledge that they need in order to do their job well” (IP2).

And again:

“How it is actually being done. In other words a lot of people write about KM but is it really been practiced it the way they say” (IP2).

There were also cases that referred to the conduct of research work in LIS faculties not into the area of KM as a whole, but on bits of it.

“I have got somebody that searching speech recognition and, being able to handle large data sets and extracting meaningful knowledge from those sets, that’s really a KM skill set. But she doesn’t call it that. She sees it as a track in information retrieval. I have also got some funded projects that are working at how we standardize metadata market languages for different formats or objects. That’s really a type of KM skill. Again we are not calling it that. Data mining is another area we have done quite a bit of data mining, but we didn’t call it KM” (IP12).

7.7.2 Joint research

A number of interviewees referred to the conduct of research projects in collaboration with colleagues from other units, including in some cases the participation of LIS students. The partners included the geography department, the school of journalism, the medical school, schools of sociology and computer science, and the sports department as well as external corporations and the research topics included networking, and data visualization, etc., Hence:

“Several of my colleagues are involved in projects involving Geographic data” (IP1).

“I am working on a really interesting project right now with two physicians who also are researchers in the area of family practice...one of them took my course in KM and said that a white bob came on for him”(IP2).

“The project has to do with the downloading of information through to peoples’ iPods, because people don’t read newspapers much these days, and so they are getting information news in other ways” (IP1).

“What we are in the process of doing is a usability laboratory and again part of that will be to look at corporate information services... to evaluate usability of those whether it is an intranet and whether it is an internal database that manages different kinds of expertise of the staff members of the corporation” (IP5).

Finally,

“At the moment I am working with another colleague and we are looking at doing some work with another university and would be very open to always discussing any opportunities to work with other colleagues and that’s working at, looking at one of professional services firm and trying to do something around the concept of knowledge analysis...The other one that I am doing is I am working with another colleague from ...she is a professor of sport management, so looking at knowledge and knowledge activity within the sports industry and there is interesting work there” (IP15).

7.7.3 The need for more research into KM

The need for LIS schools to become more involved with KM research is obvious from the interview data. A number of interviewees (four) confirmed that there was no research into KM being conducted at their schools. There was also little sign of the involvement of LIS schools as the major partner in joint research programs with external groups, except for the few aforementioned efforts. Nor was there any sign of

the existence of a formal KM research group in the interviewees' universities, except in one case, where the project had folded quickly on the departure of the KM people from the school (IP3).

Typical of the comments of interviewees was that of IP13:

“As far as schools go there is not much KM research” (IP13).

IP13 attributes this inadequate attention to research, partly to an inadequate understanding of the teaching of KM, and of its need for direct input from research. As a result, it seems clear that LIS schools need to invest more on the research part if they want to improve their education in this area.

7.8 KM Practice

Although described as ‘prime examples of knowledge organizations’ (McManus & Loughridge 2002), whose core business was to deal with knowledge (Aiyepoku 2001), the evidence from the literature is that universities have been lagging in their attempt to apply KM principles and practices to their work (Aiyepoku 2001; McManus & Loughridge 2002). For those schools which offer KM education, the implementation of KM is crucial, not just to help them to leverage their knowledge, but also to exemplify the practice of KM in the real world, and to provide a basis for promoting their students' learning experience and for practicing what they preach. Partial recognition of the importance of this point among the interview participants, is reflected in the following quote:

“Lately our department has come to the conclusion that perhaps we should have more KM practices, because we are finding that some of our excellent long-time secretaries are leaving, and they have so much knowledge, that should be found around when they go or when a faculty member leaves, we are left with some gaps in how we are doing things or how we did it last times. And so I think there is a growing aware of it” (IP2).

7.9 Conclusion

The need for a broad-spectrum approach to KM education that includes different dimensions of the subject, has been emphasised throughout the literature (Chaudhry, AS & Higgins 2001, 2004). At the same time, the growing demand for suitable knowledge management courses continues to be emphasised (Morris 2001; Todd, RJ & Southon 2001). This reference to *suitability* is important, especially given the nature of KM practice, and the different competencies being demanded in the job market. These ideas have found resonance in the current research. Participants acknowledged the need for KM programs that were both inclusive and suitable. For more specialist audiences, the place of KM education within the LIS sector was recognised as being somewhat dichotomous, constituting both a distinct and separate track, but also pervading the entire LIS curriculum. Finally emerging from the interview findings, was an emphasis on the need for LIS schools to engage more with research in the KM field, and to import KM applications into their own works. This was necessary in order to empower their academics and graduates with problem solving skills in the KM arena and provide them with real KM experience.

Chapter 8: KM Course Implementation

8.1 Introduction

There is still much ambiguity about the nature of KM programs and their constituents. As KM education is still a quite recent phenomenon, there are many unresolved issues which need further investigation. Over the last couple of years, institutions of higher education, as noted by Sutton et al. (2002) have designed and developed educational programs for KM within an uncertain theoretical and practitioner climate. Course materials, as they observed, “Are based upon an ambiguous framework of information that is ubiquitous, vague and sometimes a repackaging of existing discipline material” (Sutton, M.J.D et al. 2002, P.4). To help in the development of an appropriate approach to KM education in the LIS sector, this study examined the contribution of current LIS curricula in promoting KM competencies, and in meeting the needs of KM education, and sought to identify ingredients for a KM curriculum. Furthermore, the possibility of collaboration in the design and implementation of these programs was investigated, and impediments to forging collaborative arrangements were discussed. Figure 8.1 shows the main themes addressed in this chapter.

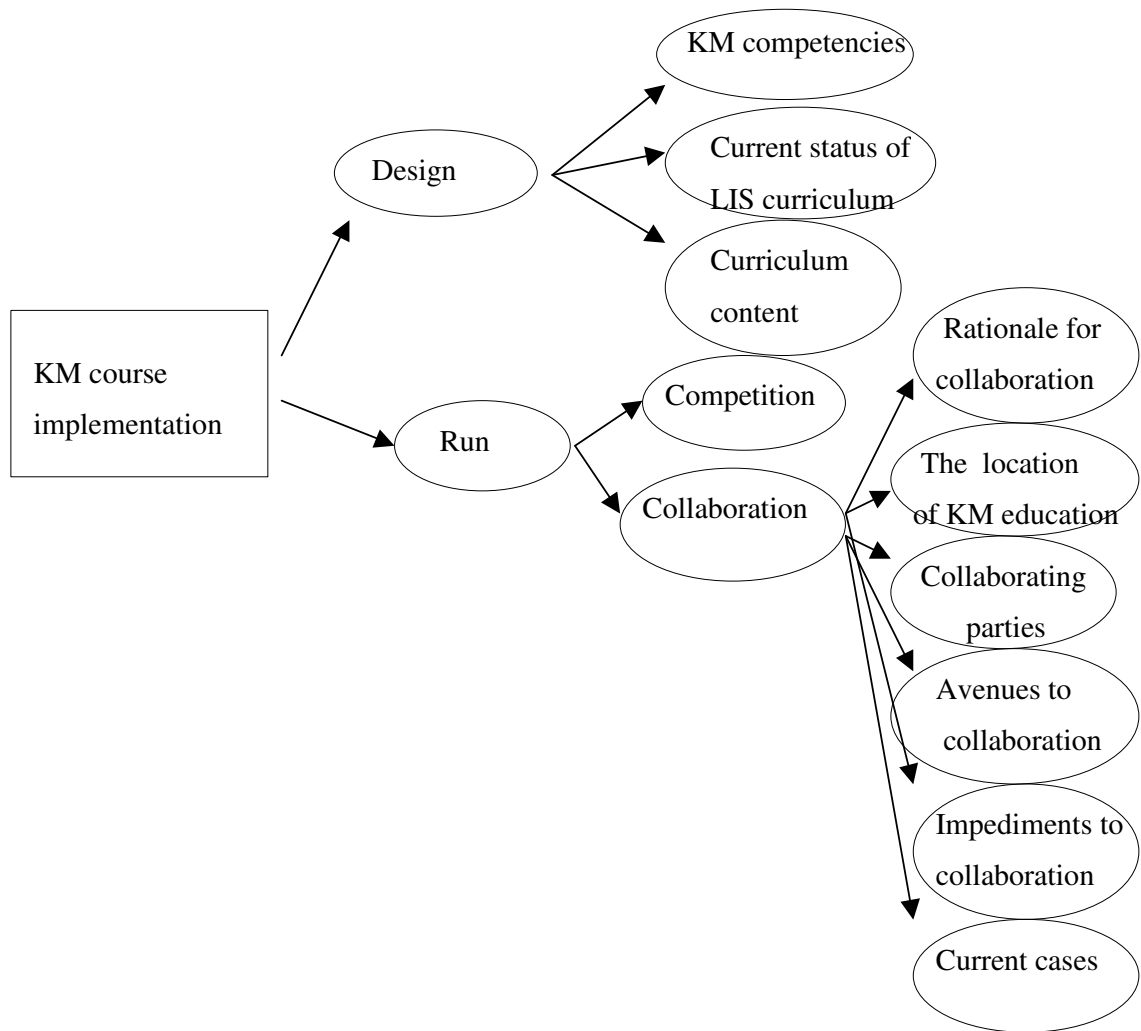


Figure 8.1 Themes in KM course implementation.

8.2 KM competencies and their curriculum implications

As demonstrated in the literature review chapter, specification of the KM competencies required by LIS professionals is an important step in developing KM educational programs, helping to identify the underlying sub-disciplines and clarifying issues of focus and concentration. The perceptions of LIS professionals on the importance of different competencies for knowledge management practice have been investigated in previous research conducted by a colleague at RMIT University. A report of the findings has been presented in Hazeri et al.(2007). The present

research has investigated the extent to which the current LIS curriculum helps in the promotion of these competencies among LIS graduates. A previous overview of the LIS literature revealed that to some extent at least, the LIS curriculum was capable of preparing students for a knowledge management career (Lai 2005). Earlier still Reardon (1998) maintained, some of the makings of knowledge management were and had been present in LIS for a long time. This included a wide range of competencies, including information skills, information technology, multi-media and communications technology skills, publishing and document design skills - both conventional and electronic - and database and information system and service design skills. These, as he pointed out, needed to be developed and modified to meet the need for managing knowledge, but they did not, of themselves, constitute knowledge management. As further evidence Loughridge argued that "The best of current professional education would appear ... to be already imparting or developing many of the skills and competencies called for in KM" (Loughridge, Brendan 1999, P.251). Discussing the skills and competencies, needed for KM practice he argued that most of them would seem familiar to practising librarians and information managers, and many were already being addressed in the curriculum of professional education for librarianship and information management.

A study of KM education in Australia revealed a limited amount of overlap between what ALIA considered to be core LIS attributes, and the curricula of KM courses offered by Australian universities. According to Ferguson and Hider, "The weight of opinion and evidence, not least the enablers listed by the Australian KM Standard, suggests that the required KM understanding and skills go far beyond traditional LIS education" (Ferguson & Hider 2006, P.101).

To clarify this and related issues, the contribution of LIS-related courses to the promotion of previously identified potential KM skills among graduates was investigated in the current survey. Using seven-point Likert scales, respondents were asked their opinion as to what extent the required skills for knowledge management could be achieved through current LIS curricula. The findings revealed a very high contribution of LIS-related courses in promoting information management skills, and in enhancing the ability of students to use information technologies. The major contribution of these courses in promoting many of the other identified knowledge

management skills among graduates, including managerial competencies, was also confirmed by survey respondents. Respondents believed that LIS curricula were weakest in the areas of planning and organizational skills, while also requiring more attention to the business and human resource components. The overall perceptions of the extent of the LIS contribution can be found in Figure 8.2.

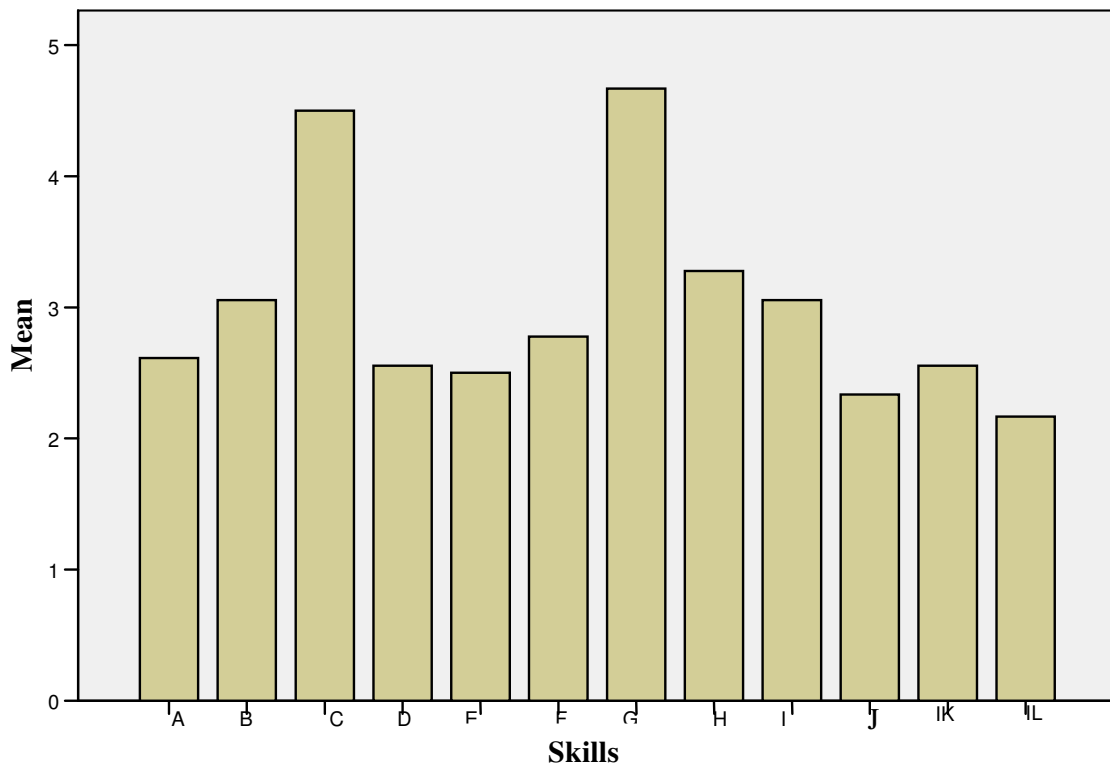


Figure 8.2 Mean scores for the contribution of LIS related courses in promoting KM potential competencies among graduates.

Keys: A: Leadership skills; B: Communication and networking skills, C: Ability to use information technologies; D: Change management skills; E: Project management skills; F: Creative thinking; G: Information management skills; H: Team working skills; I: Decision making skills; J: Business acumen; K: Human resource management skills; L: Planning and organisational skills.

8.3 KM education in the current LIS curriculum

In addition to questions covered in the above section, the following statements were also embedded in the questionnaire, to see if existing LIS curricula could meet the overall needs of knowledge management education, or if there was a need for a new approach.

a) Current changes in LIS education have led to improved knowledge management practices in libraries.

Nearly one third of participants (31.1%), believed that current changes in LIS education had led to an improvement in KM practices in libraries, while 21.4% of them did not. However, almost half of the respondents to this question (47.6%) were unable to comment on it, possibly owing to the disjointed nature of the movement of LIS education toward knowledge management, and/or a lack of opportunity to participate in library-based knowledge management initiatives. One open-ended question asked participants if they were aware of successful knowledge management activities in library and information centres that had been directly influenced by the KM element in LIS education. Nobody provided a direct answer to this question, although one respondent stated their graduates went on to get KM jobs, and another declared that most of their graduates did not enter the library profession. There was also a comment praising the impact of traditional LIS skills on KM practices, from a respondent who added “I would say most of the successful KM activities are influenced by good old LIS skills with the name changed and more company backing and money to support it now it is trendy” (QP).

b) There are insufficient links between current educational programs and KM practices.

While no one appeared to be strongly in disagreement with this statement, the majority of participants (59.2%), perceived that there were insufficient links between current educational programs and KM practice. A big percentage of responses (34.0%), again fell into the ‘*don’t know*’ category. These findings, and the earlier statement, could be a reflection of the doubts in the LIS community as concerns the alignment of academic KM with what happens in the real workplace environment.

c) Existing LIS curricula can meet the needs of knowledge management education.

Almost half of the respondents (48.1%), did not see current LIS curricula as meeting the demands of KM education. It is also interesting that a relatively large number of participants (32.7%), seemed to have no opinion in this regard. The high rate of ambiguity about and disagreement with, this statement could be attributed to the relatively recent emergence of KM, and the disparate/divergent range of responses to its education from LIS schools.

d) Current LIS curricula do not equip students with the competencies demanded by the KM environment.

The majority of participants (64.4%) agreed that current LIS curricula did not equip students with the competencies demanded by the KM environment. A considerable percentage of responses to this statement (24.0%), again fell into the '*don't know*' category. Typical here was an additional comment from one respondent who said "I do think that many of the people I find working in the profession don't have the necessary skill set. Admittedly many were trained years ago, but I'm not sure that recent graduates are any better" (QP). These findings, and the earlier statement, would seem to suggest that the LIS community is not satisfied with the KM dimension to their existing educational programs and is demanding improvement. As Rehman and Chaudhry argue "We feel that in order to take full advantage of the KM potential, curricula and teaching in LIS programs should be reviewed with a view of turning traditional information management skills into knowledge management competencies" ((Rehman & Chaudhry 2005, P.12).

e) LIS curricula must change in order to respond to the challenges of knowledge management.

Interestingly, 75.9% of respondents suggested revising LIS curricula in order to respond to the challenges of knowledge management, with again a considerable percentage of hesitant respondents (18.3%). Recommendations for curricula to keep pace with advances in the knowledge economy have been appearing in the literature for many years, with more recent calls for a response to the challenges of knowledge

management. For example, Reardon argued that “There is a need for significant changes in thinking, attitude, education and training before we can confidently face the knowledge management future that awaits in many important areas of the information and library professions” (Reardon 1998, P.1). Reardon also identified those schools of Information Science responsible for initiating and leading these changes. Bontis et al. (2006) observed that the relative youth and dynamism of the KM field meant that maintaining course content current was quite a challenge.

Table 8.1 Percentages of agreement/disagreement with statements that project the current posture of LIS educational programs in respect of KM.

	strongly disagree	disagree	don't know	agree	strongly agree	Overall ¹⁴ (mean)
a) Current changes in LIS education have led to improved knowledge management practices in libraries.	4.9	16.5	47.6	21.4	9.7	Don't Know
b) There are insufficient links between current educational programs and KM practices.	-	6.8	34.0	38.8	20.4	Agree
c) Existing LIS curricula can meet the needs for knowledge management education.	8.7	39.4	32.7	18.3	1.0	Don't Know
d) Current LIS curricula do not equip students with the competencies demanded by KM environment.	1.0	10.6	24.0	47.1	17.3	Agree
e) LIS curricula must change in order to respond to the challenges of KM.	1.9	3.8	18.3	47.1	28.8	Agree

¹⁴The following scoring has been designed for the purpose of marking the overall perceptions of respondents in section 8.3:

1 to 1.44= Strongly disagree

1.45 to 2.44= Disagree

2.45 to 3.44= Don't know

3.45 to 4.44= Agree

4.45 to 5= Strongly agree

8.4 Curriculum content

The design of this section of the survey was intended to capture the flavour of the KM curriculum in LIS schools. Hitherto, the signs were that this was most influenced by the respective perceptions of educational providers (Chaudhry, A & Higgins 2003; Higgins & Chaudhry 2003; Saito 2007). The different educational needs of students in each domain may also be a justification for curriculum diversity. This perhaps to some extent, can be justified by the fact that knowledge management is context-dependent. While comparing the content of KM courses in 7 Australian universities, Ferguson and Hider (2006) found a core subject equivalency of just under 50% (1.87/4) amongst Masters courses, which they considered to be a reasonable level of overlap.

According to Ruth et al. (1999), the crucial question for preparing a KM course is the intellectual territory that can be covered. The difficulties in determining the intellectual territory to be covered by any viable and practical KM course have been said by Brogan et al. (2001) to be the factor that has caused educators to see KM as an unbounded universe and just too hard, with the consequence that very few universities offer courses in this discipline area. Determining the optimal mix of subjects from the various disciplines that best meets the objective of developing the requisite professional competencies of knowledge professionals, has also been identified as a challenging issue in KM curriculum design by Loon and Hawamdeh (2002). Bearing in mind the diverse scope of existing programs, and the wide variety of perspectives on the importance of each course, it might be concluded that it would be too hard or actually impossible, to determine the exact content and level of the courses that should be offered. Therefore, the present researcher tried to identify some broad categories within which course subjects might fall, using both the survey and interview approach. To this end, survey participants were asked to specify the extent of desired focus on each category, using a scale of zero to four. What follows is a series of subject categories in order of their perceived level of concentration, from the viewpoints of questionnaire respondents. The free-text section of this question provided the chance for respondents to add any other dimensions that they thought were important for the content of the KM curriculum in the LIS discipline. Further comments by interviewees have been reported where appropriate.

- **Knowledge and related issues**

As managing intangible assets constitutes the core of knowledge management, LIS education will need to emphasise the complex characteristics of knowledge, along with the human dimension to KM. So a range of knowledge-oriented issues including: knowledge, the knowledge-based economy, knowledge creation, sharing and use, knowledge mapping and auditing and metrics for knowledge was articulated in respect of a range of specific courses. Interestingly, respondents gave the highest level of emphasis (mean of 3.40) to this area while acknowledging the high level of importance of all other identified subject areas. Additionally, the open-ended section of the question elicited more specific knowledge-related themes like ‘impediments to knowledge sharing’, ‘different definitions of knowledge and approaches to its management’, ‘social network analysis; specify systems (eg social software)’ and ‘indigenous knowledge systems and applications to practice in library and information’.

Once again there is support for this perceived breadth of coverage within the professional literature. For example, Southon and Todd (1999) observed “We believe that people-centred approach,... gives emphasis to understanding people in a variety of contexts, is vital to any program of professional education for KM”.

The need for the LIS curriculum to focus on the human dimension of KM and on managing intangible assets, was also emphasised by a number of interviewees. In this regard for example, IP16 refers to the importance of knowledge sharing. The following quote from IP6 also demonstrates the point.

“At the bottom of all KM are the people who have the knowledge themselves. And you have to learn how to manage and work with them; so that they will actually share what it is they know” (IP6).

- **Practical dimension**

An emphasis on the inclusion of a practical dimension to KM courses, including practicums/ internships, case studies, and the like, marked a further level of respondent perception (with a mean of 3.20) in the survey. An understanding of KM will require genuine exposure to this practical dimension. Arguably when studying a

phenomenon so ephemeral as KM, it is wise to couch the concept within a practical context (Bontis, Nick, Serenko & Biktimirov 2006). This emphasis on the practical dimension to the KM curriculum is so substantial that, as Sutton observes, “All of the KM certification programs offered by organisations advertise that they facilitate the practical learning associated with KM in business, and some even explicitly suggest that most academic programs may be too theoretical to be useful in the workplace” (Sutton, Michael J.D. 2007, P.9). In addition to this, the literature is full of calls for KM programs to be offered in a more pragmatic way, such as supported by substantial case studies (Southon, G, Todd & Seneque 2002). The importance of case studies in providing students with the opportunity to develop and apply their understanding of KM to real-world situations, and in a variety of business decision settings, has been highlighted throughout the literature (Bontis, Nick, Serenko & Biktimirov 2006).

Grounded in the interview data were several assertions of the importance of incorporating case studies in the curriculum. Hence:

“Because KM is just somewhat of an abstract concept, having case studies is critical” (IP2).

And again:

“The essential piece would be like case studies as how KM works in the business environment” (IP12).

“I use in my teaching a lot of case studies. I use a lot of corporate videos; video series...to start conversation and that has been quite useful” (IP15).

The use of case study as an operational component of a KM course was also recommended by IP9. There were also calls for the development of additional case studies from interviewees, with IP13 for example, referring to the inadequate amount of case studies that was available.

Elsewhere, professional workplace experience or internships, have been proposed as a means by which LIS education can be closely aligned with industry best-practice (Milne, Patricia 1999). According to Zimmerman (2002) “ Internships are an important part of the program because they enable students to hone their

understanding of the business world and learn how KM systems are applied in various industries and corporations”.

In this regard, Parycek and Pircher (2003) point to the practice-oriented aspect as one of the main course characteristics which allows the participants to directly apply what they have learned. Gokhale (1999) recommends that LIS educators send students to non-library settings for long durations, as is common practice in other disciplines such as Tourism, Nursing, and Engineering.

The need for the LIS curriculum to focus on real problem solving has been demonstrated in the following quote.

“[LIS programs] need for perhaps focusing on a particular new problem that are emerging or problem that corporation have with this [KM] might be helpful to the field as well” (IP5).

This is regarded as an authentic way of learning by IP17 describing it:

“In the sense of learning about real life situations through actually working in organisations rather than just learning the theory, or actually, having some problem-solving activities to do to work with real organisations. And I think that’s where we’ve got lots of work to do, in terms of even getting them [students] fieldwork experience from business organisations”(IP17).

- **Organisational and management issues**

A further dimension emerging in survey responses was that of organisational and management issues, including human resource management, organisational behaviour, change management, project management, decision making, marketing, and strategy, which collectively attracted a mean score of 3.10. From the open-ended section of the relevant question, a list of related topics including ‘learning organisation’, ‘customer service’ and ‘innovation business planning’ were suggested by respondents. There is plenty of support in the literature for the inclusion of these organisational and management aspects in the KM curriculum, including the need for conveying a proper understanding of business and economic concepts. According to Lai (2005) for example, education for KM should prepare students with proper understandings and expectations of corporate culture and its environment. In another example, Koenig (1999) referred to the need for a deep understanding of

organisational context and culture among graduates as a requisite for obtaining senior positions in KM.

Grounded in the interview data also, was a significant level of support for the incorporation of business and management ingredients into the LIS curriculum. For example, IP3 identified business as the core element of the KM curriculum.

“The core element is business, and business strategy, that is all the means to solve business problems” (IP3).

Strategic management was also considered by interviewees as an area which could help librarians to promote themselves within the organisation.

“One area that probably needs more emphasis is strategic management. One of the complaints that might be made about librarians is that they are not seen to engage with the strategic objectives of their organisations. I am not sure whether that’s true; as empirically I am not sure that could be demonstrated, because within the corporate sector I think there are so many proactive librarians who do engage with organisational objectives and so on. But certainly there is a perception that LIS professionals seems to be on the periphery of their organisation” (IP13).

IP13 considered other areas of management like project management and change management and the economics of information and knowledge to be extremely important. He added,

“I think one of things we’re hearing when we talked to some corporations who work with us and our library council is that; you know there is a whole notion of how do you quantify the value of knowledge management, that’s an issue for companies. But right they are making quick investment on these things. Or they think that they have to make big investment, and they are trying to evaluate the effectiveness of those investments” (IP13).

Furthermore, it seems that at least in some cases, LIS programs have responded to the needs of the KM curriculum by embracing management and organisational elements. This is clear from the statement by IP9 that 75% of the core in their KM course comes from a management perspective which includes for example, the link to organisational strategy, costs, benefits, standards and professional roles.

Finally, the importance of electronic business and virtual organisations to the study of KM was emphasised by IP12.

- **Information and related issues**

Information and related issues, including those of the information society, information needs and provision, and information management, emerged as the next stage of perceived need for inclusion within the KM curricula of LIS schools, with a mean score of 3.06. The fact that rather less emphasis was placed on this part of the KM curriculum, as opposed to the knowledge element, can be explained by the fact that LIS curricula already encompass information-specific courses. Although within the literature there are recommendations that course designers need to take note that information science subjects such as information organisation and information retrieval may not appeal in this market place (Brogan, Hingston & Wilson 2001), it is important to accept nonetheless that ‘information and its related issues’ still occupy positions of importance within the KM curriculum. Indeed, survey respondents commented on the need to stress the aspects of core librarianship that relate to and support KM for example ‘information literacy’, ‘content management’, ‘information organisation’ and ‘information retrieval’.

Within the interview data also, there were many references to the need for the inclusion of information/knowledge organisation and retrieval, such as taxonomies, thesauri and indexes by interviewees like IP8 and IP9. There were also references to the need for knowledge discovery and knowledge mapping, in addition to knowledge organisation as important subsets of the KM curriculum by IP12. In this vein, IP 5 considered three major elements for inclusion in KM courses for LIS namely knowledge organisation, access and usability.

“One is, we put a lot of emphasis on, knowledge organization, how to structure the data, how do you capture it, how you identify it, how you identify those pieces of knowledge or information that are going to be useful to the organization, how do you put that in a form or format that the organization can act on it. The second is accessibility. How do you store it, what kind of approach you take to database, to information retrieval and so forth within the corporation that don’t allow access to that information with, and we look at internet, database management systems, web services and so forth. The third area would be the whole area of usability which is in corporation, which how do you create information systems that represent good design, best of practice relative to making system easy to use, bringing the user entity into the design process, so that you can maximise the value of that information” (IP5).

- **Research and evaluation**

Interestingly ‘Research and evaluation’, including research methods, data compilation and analysis, survey design, and interviewing techniques was rated at the same level of importance as were ‘information and its related issues’. It seems that this issue would be an integral part of the information curriculum with or without the onset of knowledge management. Within the literature, Gokhale (1999) refers to research activity in the form of, for example, project work, dissertations and investigative work, as learning tools for improving thinking skills among students, and claims that traditional syllabi have not given much attention to this aspect in designing curricula and framing syllabi.

- **Interpersonal issues**

The relative importance of ‘Interpersonal issues,’ including networking and communication, team working and leadership, was confirmed from the perspective of the survey respondents with a mean score of 3.05. Other important ingredients identified were ‘Social aspects of information-knowledge power in the workplace’, and ‘The socio-cultural dimensions’ of KM. This is hardly unexpected in that for example, as more libraries converge into centres of culture, the library curriculum must necessarily focus on social and behavioural aspects of learning”(Varaprasad 2006).

Drawing on the interviews also, the case for inclusion of communication and networking ingredients was reinforced. As one interviewee remarked:

“The communication aspects, it’s something that’s key too, and we should incorporate it more and more as the years go on...things about communities of practice, how you send them out there and so on”(IP2).

The idea that the LIS curriculum needs to include more on networking was endorsed by IP5 because “Successful KM is based quite heavy on networking...in the old fashion form, people to people” (IP5).

- **ICT**

ICT, including computers and networks, information architecture, information systems and applications, with a mean score of 2.88, ranked last among the categories. However, it is clearly of major significance. As one respondent to the survey observed “As I graduated ages ago this may already be in place but I certainly could have done with in-depth ICT skills rather than learn on the job to manage the website and intranet and answer all the general computing questions as ICT do not seem to know that people actually use their systems”. Furthermore, there is ample documentation within the literature of the need for LIS professionals to become knowledgeable about ICT. According to Lai “In the age of post technology, it is clear that a KM professional needs to know at least the basics of IT” (Lai 2005, P.350). Koenig also (1999) pointed out the needs of information professionals to know the basics of IT, particularly in the area of telecommunication and networks, particularly in the internet and its derivatives.

The need for LIS curricula to address KM technological issues is illustrated in the following quotes from interview participants.

“Technology is only an enabler and only part of it” (IP18).

And:

“Technology is playing the role of business enabler in the sense that it is used to facilitate implementation of the business strategy; IT is usually the first enabler that business managers look at. If IT hasn’t had any response then they turn their faces to other things, perhaps to learning, to management solutions, or other things” (IP3).

There were however, other views on the role of technology.

“I don’t use much technology, other than online learning. I don’t do any technology work per se because for me that’s not core to KM” (IP15).

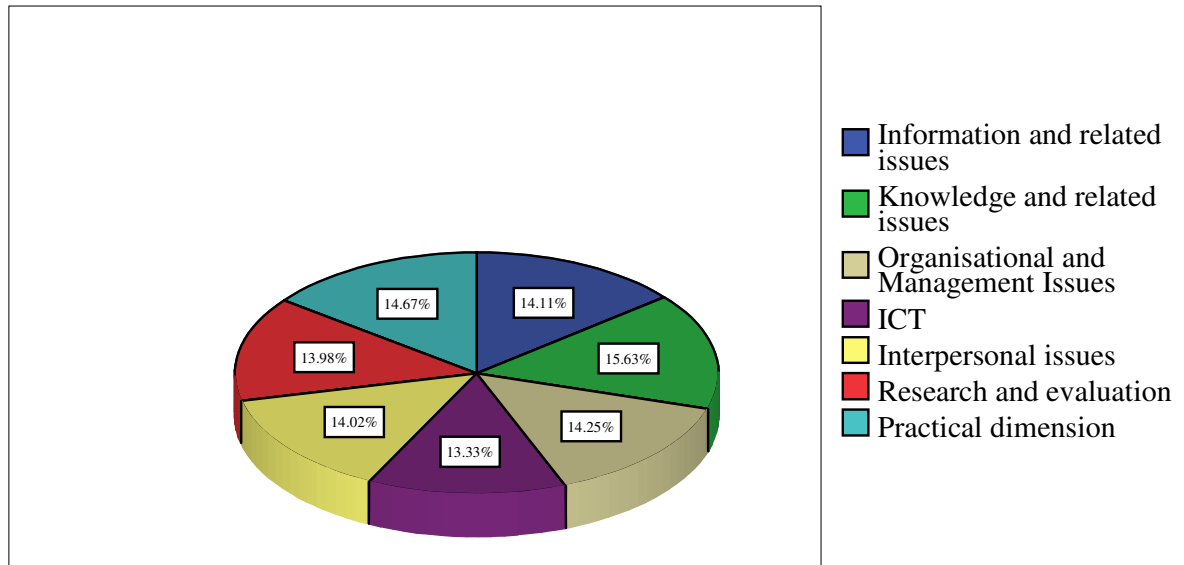


Figure 8.3 The level of focus on elements of the KM curriculum.

8.5 Competition and Collaboration

The importance of KM in the current knowledge economy, and the multidisciplinary character of this field of study, have resulted in widespread claims for ownership from a variety of disciplines. An example of such claims emerged in the interviews:

“There is justifiable ownership of this field within our schools...I think very often business schools think they own that domain, whereas they are just going to be a small part of it”(IP1).

It is hardly surprising that the interview data might reflect the perceived dominance of LIS schools in KM education. In most cases, the interviewees did not think that other kinds of school posed a serious threat. For example, while IP2 confirmed that KM was a cross-disciplinary field, she stated that at the time of interview, other schools had nothing to offer at her university.

“Right now there is nothing to be offered in other schools or other departments” (IP2).

More evidence of this perceived domination by LIS schools appeared in the comments by IP4, that the competition in that university came mainly from the computer area, but that this was not a huge issue. IP5 also noted that while there were elements of courses that were relevant at other schools, at the moment, his school was the only provider of a complete course.

“There are pieces of courses that touched upon it; KM in other schools, like in system courses or strategy courses , but I think it’s safe to say that our university is the only course offering” (IP5).

IP18 reported the presence of a political dimension to competition, in that after his school had established their KM course, both The School of Management and The School of Computer Science tried to take it over. This kind of competition observed IP8, would have to be regarded as a threat to the position of the LIS education sector. IP8 was also concerned that LIS schools had missed an opportunity, and felt they should have been more aggressive and gone into KM 10 years earlier.

Such perceptions aside, a number of interviewees, were more interested in cooperation with potential rivals than in competing with them. Hence:

“I think from computer science though students could have more of strength in systems, and building systems; our students; I want to say also have a background in computer science, but they will know more about programs & services and access to the information as well as how information is used. I think that in the school of management, courses may be geared to chief financial officers. People who go through MBA programs have a better grounding in resource issues than I think that people in LIS would have. So they are complementary” (IP9).

And again; IP5 regarded the possibility of cooperation with other departments as a real opportunity.

“So they need to collaborate because they are complementary. If they all work together, they can make a complete KM program...LIS schools tend to focus more on aspects of organization, access, and usability; where the business schools might well begin to focus on; what are the strategies and how do you incorporate knowledge into strategies, and how do you develop strategies around knowledge and knowledge management systems”(IP5).

IP5 pointed to the fact that these schools could learn a lot from each other, saying, “When you begin to take deeper sight into things like accessibility, there is a lot of opportunities and you know within our college with database designs and different kinds of web services and the XML on all of the emerging protocols that allow new kinds of forms of access to take place around knowledge within a corporation. So they should collaborate to learn from each other”. As another example while IP5 argued that his school was the only course offering at the time of the interview, he pointed to the existence of some elements of courses like KM in system courses or strategy courses in other schools. This indeed presented an opportunity for LIS schools to borrow those items through collaboration.

In the opinion of IP7, collaboration could happen by engaging members of the broader KM community as adjunct faculty; particularly in cases where the school did not have the knowledge base or resources to offer particular courses or classes. Another way was through participation of LIS schools in advisory groups and committees. As another example IP6 pointed to the desirability of having cross-institutional enrolments in this area, even though he considered it to be impossible in practice.

IP6 referred to the technology as a bit of a stumbling block, and pointed out that the IT people had claimed a lot of the territory for themselves. She argued that the LIS School needed to work in tandem with them.

“I was saying to the class today you can’t take over IT. They have a very strong agenda and so they push, you know kind of technological solutions” (IP6).

The recognition among interviewees of the contribution that might come from other disciplines is promising. As Southon and Todd (2001) observed elsewhere, “Prospects of ‘turf warfare’ would be very destructive to all involved and to the overall understanding of the subject. Such conflict could be resolved, however, if participants saw themselves as *contributing* to knowledge management rather than *owning* it as such”.

8.5.1 Rationale for collaboration

In addition to leveraging the strength of other disciplines for the development of KM education, the interview data contained the following arguments for inter-school collaboration.

1. To help LIS schools maintain ownership of the field

With its roots in different disciplines, it is wise to assume that there is no one discipline that have the authority of KM educational ownership (Sutton, Michael J.D. 2007). Collaboration however, was perceived by one interviewee as a means of adding to the strength of LIS schools, and of ensuring that they remained as the main educational provider of KM.

“We need to collaborate to make sure that we show our ownership of this field” (IP1).

Interviewee IP1 remarked that because the management of information was an important topic it was, it is worth collaborative effort.

“I think that that’s just one of many areas in which whatever KM is that we need to collaborate; and make sure that for instance schools of social work and schools of business and geography faculties know what we offer in the area of organisation of information, organisation, dissemination of information” (IP1).

2. To accelerate the development of KM programs

In this regard, IP4 observed that LIS schools needed to cross the boundaries of library science programs and seek help from other university departments, namely those of computer science and business schools in developing KM programs. She believed that each program should follow its individual university standard, but as she said:

“Initially until each school can adopt or develop their own voice. However, I think they can do it far faster if they got together with other toward teaching KM” (IP4).

3. To help the improvement of KM and/or LIS education

Grounded in the interview data, was the view that collaboration was not only a useful enabler for institutions that were initiating programs but also that it could be a means of improving existing programs (IP13). IP7 believed that LIS schools could enhance and improve their programs by bringing to them the disciplinary knowledge of other university departments. He referred to the importance of having incentives and reward systems in order to motivate people to collaborate.

“There are no incentives for collaboration; there is no reward system for collaboration. So people tend to quote ‘collaborate’ unquote only to the extent that they need the resources of another unit in order to be credible in what they are trying to do... I think that there probably is knowledge; you know disciplinary knowledge that would be very useful to collaboration. But I think that somebody would be, have to be highly motivated to undertake that in order to enhance the program rather than to simply offer it” (IP7).

The notion that KM programs would be stronger if LIS departments collaborated with other schools and industries was endorsed by IP15, who also referred to the need for KM to be viewed through different lenses by having someone in to co-teach with her. She further pointed to the importance of engaging in collaboration with the industry sector in order to provide students with a broad understanding of the different approaches to KM in different sectors.

“Likewise I think it’s also good for the students to get a broader understanding of different industry sectors. Because one of the things that I stress in my teaching is that there is no such thing as one way to do knowledge management. And the way in which it is approached in different organisations is unique, but also there are some generalities in the ways in which we approach it against industry sectors. The way in which we look at KM in a government agency, where I am working is very different to that which is working in special services firm. So it’s really, really useful I think to get speakers or relationships with other different industry sectors” (IP15).

There was also acknowledgement among interviewees that making such liaisons could help LIS education to stay current with workplace developments. According to IP6 for example, the challenge was that the LIS profession was not as ahead as it should be, and there was a lot going on in the business arena or in the workplace that it was not even aware of. She further added “There are always what we call hidden issues and sometimes what we have to do in library schools is to try and read the road

map in front of us, and try and forecast to the best of our ability what students need to know that is, not what they have to know, it's what they need to know" (IP6). Gaps in traditional LIS curricula as regards teaching and research in KM (in areas like security and authentication and XML representation) were reported by IP14 as the rationale for collaboration with other departments. In this regard IP12 observed "I don't think LIS schools know enough of that business, the KM business...I think we need to make partnerships...I think the toolsets for collaboration are very important to KM and I'm very interested in this"(IP12). This recognition of course, is not just limited to LIS, rather it comes from the multidisciplinary nature of KM, and applies to all other related disciplines. The effect of this realisation on the development of collaborative efforts in KM education is captured in the following quote. "The IT people are realising that they need to consider the end user in far greater depth. So hopefully that would start blending the boundaries" (IP17).

The impact of collaboration on the potential improvement of KM education has also been indicated throughout the literature. As an example, Koenig (1999) observed that effective education for KM would require cooperation between different academic units. In this regard, Chaudhry and Higgins also (2003) recommended LIS schools to introduce collaboration in the design and conduct of KM programs to balance the various components in the KM curriculum. The stabilising effects of collaborative teaching on KM education were reported in research by Bontis et al. (2006). In a study of 43 KM course alumni at the Degroote School of Business, McMaster University, Canada, Bontis et al. attributed the sustainability of the learning value of their course among their graduates to the multi-disciplinary feature of their course, as well as to its practical foci in engaging with industry and exposing students to best practices, for example in organisations or among key leaders.

4. To assist in running KM programs

There was also a view among interviewees, that collaboration could improve access to potential supervisors for higher degrees, and also to a wider range of teaching materials. Hence:

"We have some PhD students working in KM and we are looking for committee members for their committee. So we have to go to other universities" (IP2).

And again:

“It was really interesting to make connection in that sort of thing [collaborating with even the most unlikely organisational units like McDonald or the Canadian group Cirque du Soleil who are doing actual KM] and ignited my interest in giving more materials that I could tell the students about and, so; I think that’s really good”(IP2).

5. To enable students to work in other settings

The importance of collaborative arrangements as an influence in preparing graduates to work in wider workplace environments was also acknowledged by interviewees. For example as IP1 observed:

“To make sure that our graduates are able to work in various fields such as business and so we are aware of some of the developments in that field” (IP1).

8.5.2 The location of KM education – which School or Department?

While most organisations today recognise the value of knowledge and the need to improve KM practices in their operations, there is very little consensus on who should be in charge of KM (Hawamdeh, Suliman 2003). In the academic environment, for example, KM is relevant to the interests of a number of different disciplines. Indeed, the multidisciplinary nature of the subject, and the breath of KM concepts employed, has led to confusion over the best means and sources of educational provision, and has increased the challenges to KM education. To investigate the perceptions of survey respondents on who should be in charge of KM education, they were asked to rate the potential contribution of major disciplines, and to specify potential interdisciplinary combinations. The findings indicate that, while the major contribution should come from LIS departments, other departments especially Business Schools, needed to get involved.

In support of collaborative alliances with business schools, one interviewee observed “We would definitely think direct that collaboration with business schools will be very useful. Maybe because many positions for KM actually require business experience” (IP10). IP8 also considered it to be extremely important for LIS schools

to expand, and to develop their partnerships, particularly with business schools, as well as with departments of education, computer science and communication.

The significance of making strategic alliances with computer schools is also reflected within the interview data. In this regard, IP6 gave examples of KM programs in Australia, such as those at UTS and RMIT. Additionally, IP12 emphasised the need for significant collaboration with computer science, business and IT departments and saw a role for cognitive psychology in the areas of user interface design.

From the survey also, additional comments to open-ended questions endorsed the importance of cooperation between different disciplines. Hence:

“There are multiple perspectives on KM”; “No one program offers all the pieces...to be accomplished, it needs background in multiple areas”. One respondent referred to the issue of the level of involvement of school: “Cooperation between different disciplines is required, although perhaps not all to the same degree” (QP).

A number of participants referred to the problems that might be encountered in participating in such interdisciplinary efforts. Typical of such comments were the following:

“Competition between departments (for resources and students) can often prevent cooperation, and since unis [universities] are often managed in a way that encourages competition this can be a problem” (QP).

And again:

“It would be good to have interdisciplinary activity, but given the politics (quota money distribution, egos) of universities in Australia the success of such a move is unlikely” (QP).

A content analysis of comments provided in this section of the survey reinforces the picture of respondents calling for the involvement of all identified departments in the process of KM education, including LIS Departments, Business Schools, Information Systems Departments and Computer Science Schools. More detailed information can be found in Table 8.2.

Other schools recognised as having the potential to engage in collaboration included Schools of Management, Communication Studies Departments, Organisational

Development Departments, Schools of Journalism and as less prominent contributors Departments of Language, History, Psychology and Sociology.

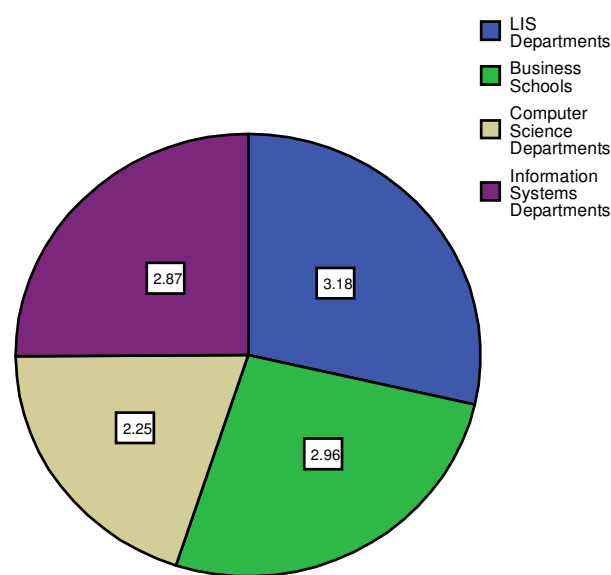


Figure 8.4 Schools contribution in provision of KM education.

Table 8.2 Content analysis of comments on interdisciplinary combination of schools in KM education.

	Frequency	Percent
a) LIS Departments	24	36.36
b) Business Schools	20	30.30
c) Computer Science Departments	8	12.12
d) Information Systems Departments	14	21.21

8.5.3 Who else do we need to collaborate with?

In addition to other academic units, LIS schools will also need to collaborate with external parties. The importance of engaging in collaborative efforts with practitioners, industries and industrial employers, libraries, and LIS; non-LIS societies was indicated in the interview data.

- Practitioners

The importance of having practitioners, those who were running KM enterprises, involved in teaching KM, was noted by IP12. In support of this, IP13 referred to the possibility of involving practitioners in the preparation of the materials for distance learning.

- Industries and industrial employers

In addition to the importance of bringing practitioners into KM education, the need to collaborate with the industry sector was also widely recognised in the interview data. As an example, IP8 stated that “It is very important that LIS schools develop alliances with external knowledge management practitioners in the area, and the businesses and industries which could become the future employers”.

IP5 argued that engaging in these collaborative efforts was essential:

“It [KM] is changing quickly and getting people in here [KM education] that are really trying to deal with managing knowledge in organizations...to know what they are doing in their organization and how they’re having to deal with that and how they’re trying to import that into their organization and how they are trying to distribute that within their organization... This is very, very insightful when we can bring somebody like that in”.

- Libraries

On the issue of collaborating with libraries however, two different viewpoints emerged among interviewees. Interviewees like IP12, recognised that some libraries and information centres were using KM and therefore, advocated wholesale collaboration with them. On the other hand, IP5 did not perceive collaboration with libraries to be high on the agenda from a learning point of view. With few exceptions he observed, the potential role of libraries and information centres in KM education was unclear. He believed that the KM concept had not yet taken much root in public, school and academic libraries. He also referred to the decline of special and corporate libraries in the US and pointed out “The emergence of enterprise wide management systems and information systems, [or] knowledge management systems ...that really have been driven by the IT directors and chief information officers in those corporations”.

- LIS and non-LIS societies

The role of LIS societies like ASIS & T (The American Society for Information Science and Technology), in bringing different groups of people together was pointed out by IP12. This interviewee was excited by the fact that although there was relatively little overlap between these groups, they talked and exchanged ideas together. IP12 furthermore, referred to the importance of engaging in collaboration with non-LIS societies like the Association of Computing Machinery (ACM) which has a special interest group in KM. Finally, IP14 emphasised the need for collaboration with professional networks such as the Society of Knowledge Officers, as institutions that were related to the profession and to industry.

8.5.4 How collaboration could happen?

The above discussions indicate that the LIS community has recognised the importance of engaging in collaboration with a wide array of academic and non-academic units, not just for purposes of KM education, but for the benefit of the whole LIS discipline. The interview data was also full of recommendations from interviewees on how to establish such collaborative arrangements. The findings are reported below.

The effectiveness of engaging in formal collaboration with industries and employers in the matter of internships was considered by IP5, who added that some industries were much more open to this than others. The use of internships and practicums as a means of making connections with organisations was supported by IP7. He pointed out the usefulness of these collaborative arrangements as a way of providing students with the opportunity to apply what they had learned. The need for collaboration with other groups in the workplace was also emphasised by IP6.

IP6 called for LIS faculties to engage in informal talks with colleagues from other departments, in order to keep up-to-date with what was going on the business arena and at the workplace. Also in this context, IP2 referred to the role of special interest groups within LIS associations, in making connections and providing meetings with people from organisations and units who were engaged in KM. This interviewee

recounted his own experience of meeting with people from such organisations as McDonalds and The Cirque du Soleil that were engaged in KM.

Interviewees also made reference to the possibility of developing joint research programs as another way of engaging in collaboration. Hence:

“One of the ways that collaboration needs to increase is with collaboration of research projects among the faculties” (IP1).

And again, IP2 pointed to the contribution of people from other departments, such as in the writing of papers and book chapters.

8.5.5 Impediments to collaboration

While suggesting ways by which collaboration could occur, the interviewees recognised the presence of several hurdles to making such arrangements.

IP6 observed that sometimes schools were unaware that they needed to collaborate. Collaboration as IP10 pointed out depends on “How the school wants to portray KM...how far [they] want to broaden the definition of KM and in where [they] want to place the students that would make the curriculum different”. IP15 also pointed to the way that schools seek to bring it all together as an effective factor, as something that can hinder collaborative efforts.

Referring to the possibility of collaborative research between faculties, IP1 observed that too many LIS schools had been too inward looking overall and not just with KM. This while IP15 for example, argued that people in the IT schools, probably because of their background, would not see themselves as a fitting into Humanities and Social Sciences Schools.

With reference to the business sector however, IP12 remarked “Building the internship possibilities for students in the business field is something that LIS schools are not used to putting forward”.

On this topic, IP11 claimed that it was hard to find places that actually did a lot of KM. He referred to a number of large industries perceived to be engaged in KM, but

doubted that this was really KM. For example, he mentioned a company where KM basically involved the provision of *SDI services*, and another where it entailed the use of *DB-text works*.

An additional problem, according to IP11, was that of finding practitioners willing to teach classes, particularly those classes which ran late in the day. This problem was aggravated by the fact that the school taught through different modes, including internal and distance courses, making it unlikely that practitioners could be involved in everything.

To some interviewees, university policies were a major hurdle to collaboration. In this regard IP6 argued “The University is always trying to get us [schools] to do things together, but then it sets up absolutely unrelated policies that prevent it from happening. And, you know things like quota systems, where the money goes and all that stuff....So it’s the matter of the way universities are running and the way they establish their policies”. While referring to the need for working more closely with other groups, IP6 claimed that this was very difficult or actually impossible because of university policies and financial considerations. This problem has emerged in the literature in references to university funding policies as an inhibitor in establishing joint course offerings (Rehman & Chaudhry 2005).

Arguably, the fact that most LIS schools are now located in other departments could be a positive factor in efforts to make collaborative arrangements, or to obtain a greater presence within the university and perhaps, additional funding (Logan & Hsieh-Yee 2001). So the problem might not always originate with the system, but could also stem from the cultural dimension, or a lack of incentives for collaboration. As one interviewee observed:

“One of the problems with KM is always how to encourage people to share knowledge” (IP11).

Structural problems do not seem to be an insurmountable problem in seeking meaningful collaboration. For example, IP6 referred to a problem of not being able to invite a guest lecturer to participate in online courses, and then came up with the solution of recording the guest lecture and putting it in the website. Another problem

typically concerned the geographic location of schools. IP10 reported that, as her school was located in a largely non-industrial area, it was difficult to find industry partners for collaboration. IP13 also pointed to the problems for schools not located in major cities.

“One of the problems that we have is that we are not in a major city, so we can’t invite some of different industry to come along and talk to our students. So we have to find a different way of doing that, but; I mean that could be done electronically for example” (IP13).

In a distinctly different vein, IP2 did not see any particular problem in relation to the use of guest lecturers.

“It just take some effort, sometimes like to travel ...I often have guest teachers come to the class from business, people who have been involved in KM and so that takes a little extra; I usually take them out for dinner or after lunch and you know...”(IP2).

8.5.6 Current cases of collaboration

Despite the perceived impediments to the development of collaborative alliances, the interview data contain at least some instances of successful partnerships. For example, IP2 reported the willingness of a number of professors in the Communication Department at his university who were interested in KM, to work in collaboration the LIS School. According to IP6 however, “While I think I should be working very closely with my colleagues in the business school, and with information systems; we had set up what it is now graduate certificate and may develop into a grad dip [graduate diploma] in KM and we had just decided if they want to join us they can make the approach”.

And in an industry context, IP5 reported success in that:

“We have some corporations that are willing to participate with us here”.

8.6 Conclusion

In light of growing advances in the LIS discipline, the need for continual adjustments to educational programs is pressing. The findings reported in this chapter suggest that, although existing LIS programs are to some extent satisfying the demands for KM education, particularly in the area of information management and IT capabilities, there is still considerable room for improvement. There is need for a greater understanding of knowledge as a concept, and its related issues, while focusing on the practical dimensions of KM. There also remains the requirement to cover the organizational, management and business dimensions of KM. Clearly, the need remains to close existing gaps between the content of current curricula and the expectations of stakeholders, including students, employers and professional associations.

Furthermore, results from this part of the study highlight the necessarily multidisciplinary character of KM curricula, and the need for a collaborative approach in order to achieve the creation of a holistic curriculum. In particular, the research participants stressed the need for liaisons with business schools and with industry. For many of the interviewees, there were no serious impediments to making such alliances if schools really recognised that they needed them.

Chapter 9: KM Education: Issues and Recommendations

9.1 Introduction

This chapter addresses the challenges of involvement of LIS schools with KM education, and introduces the factors that are driving and shaping KM education in the LIS sector. The responsibilities of LIS schools in responding to KM education are recognised and recommendations are offered to help them overcome the problems likely to be encountered. Figure 9.1 indicates the main themes discussed in this chapter.

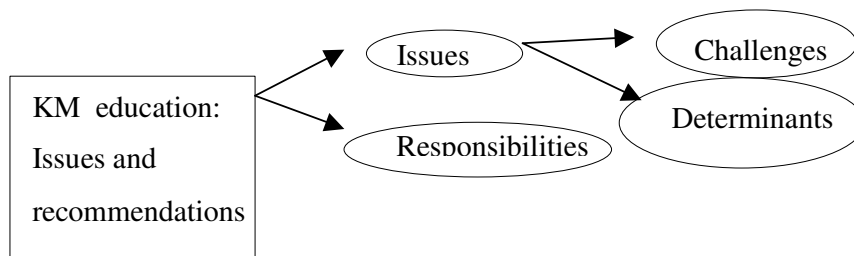


Figure 9.1 Themes in KM education: issues and recommendations.

9.2 Challenges to KM Education

As a newly-emerging, multi-dimensional field of study, KM education is faced with many significant challenges. The professional literature has largely underlined the challenges associated with either developing or running appropriate KM curricula. The breadth of what constitutes the KM concept, the multiplicity of its required competencies, and the identification of those KM elements to be incorporated into LIS curricula, have been identified by a number of commentators (Hawamdeh, S et al. 2004; Koenig, Michael ED 1999; Milne, Patricia 1999). As regards the conduct of these programs however, most of the emphasis within the literature has been on the challenges associated with the integration of different disciplines, including resource implications, and the difficulty of finding suitable faculties who are both willing and

capable of teaching KM (Hawamdeh, Suliman 2005; Sutton, Michael J.D 2007). A number of wider issues emerged during the interviews, and these are now reported.

9.2.1 Perceptions of KM

As a consensus on the meaning of KM has still to be established among LIS professionals, matters of perception are still important. Hence:

“If you are saying you want to include KM, I think the obstacles are people like me who say ‘What is this’ and people like Tom Wilson who says “What is this; show me what’s the essence of this field” and if we are going to include something so that we get better public relations for our school; well that’s fine but let’s know what we are doing it for and not introduce something that is a hollow shell, which is what I see most of the time” (IP1).

And again:

“I know of academics in other institutions who regard KM as simply IM, just been relabelled. So there is a bit of challenge there and if a lot of staff don’t accept KM as any thing particularly unique” (IP13).

IP18 also reported the presence of such opposition (five members out of a department of ten) at the time when KM was introduced.

This opposition to the adoption of KM in LIS schools can be based on an incomplete understanding of the field, and also on fear of losing out in the subsequent changes. For this reason, Sutton (2007) sees the diversity of KM definitions as a threat to the proper understanding of KM and argues that “There is a fear as well as a mystique surrounding the phenomenon of KM, and the use and meaning associated with the phrase- a kind of boundless ambiguity or contradiction”. Hence, as one interviewee remarked:

“The lack of definition of and general understanding about what is it, I think that one is a big problem that the IT people think it’s a system, and if you use the software and place them that going to be the magic thing. In the business context very often its just the question of management...” (IP17).

And again:

“There are people in the profession, who guard their territory very jealously” (IP11).

In the interview data, there was recognition that this opposition might largely be a problem at the initial stage and less so after establishment of the course. As IP2 observed:

“I was not in here the time when dispute put in effect. I came in later in the year, when it was already established. But even when I came and began teaching the course, I heard a lot of slight comments from other faculties like; there is no such thing as KM, this is a fad, you know, you teach it this year and then we will have to get ride of this course, a little be old.... And it’s just really this year that people have started saying; no maybe we should do a little about KM, so educate it all that time”.

9.2.2 Understanding the need for KM education

In the interview data there was a view that the need for KM education was still not well recognised. Hence:

“People don’t understand it, is another barrier. People haven’t themselves; faculty themselves haven’t taken a course in KM. So they don’t quite see it as something other people would like to take. It’s usually not considered a required course” (IP2).

And again:

“I don’t think the US has realized what a huge international impact KM has” (IP12).

There was also a view reflected in the interviews that, although competent to do so, LIS professionals were reluctant to apply their knowledge and skills in the business world and as a result, they were invisible to that community. Hence:

“A lot of people in our field probably don’t know the specific information needs of sales people, accounts people, and so on. But we have got the techniques that are required for analysing that. And I think that’s why probably the commerce people would not understand that we actually have useful expertise” (IP11).

And again as IP12 remarked:

“The industrial cases and the business cases are; you know getting those and be able to expose the students to that business environment often isn’t part of the purview of LIS...even if we go outside of library, traditional libraries for placing the internship; usually it likes museums, and archives, very rarely we

will place LIS students in a dot com or a huge multinational corporation” (IP12).

In support of this IP4 argued that “LIS faculty don’t really have a good vision of where we can go”.

Finally, professional scepticism has been mentioned as a possible impediment to the development of KM education in LIS schools.

“Librarians although sometimes engaged in KM projects, often lack a real vision for such involvement. They most often work under constraints and don’t have the freedom to engage fully” (IP4).

This lack of visibility of library involvement with KM was noted also by IP2:

“Well, it doesn’t seem right there of the heart of library work, I mean it is in many ways and especially in specialized libraries, very often the librarian will get involved in the KM program, if they have one, but ... So I think that’s a barrier”(IP2).

9.2.3 Attracting students to KM

The attraction of students to the KM discipline has been perceived by interviewees as another challenge to KM education. According to IP5 for example, at the time of interview KM was attractive or interesting only to a minority of students. However, once KM programs are up and running this might well be less of an issue. IP6 described her experience, whereby students at first had not been attracted to the KM course, because they did not know what it was. However, when they went through the course and learned to think about its issues and principles, then they changed their minds and started to realise its importance.

“I have got over one hundred students in this semester. We made it compulsory... I had a hundred and fifty emails in the first week about ‘what is this stupid unit, you know why I am doing it?, this is stupid, this is this, this is that’, So our job has been to try you know get them [students] to think about the issues and the principles and everything, and I had told them flat that there is no right or wrong answer. That this is the unit where we developed our thoughts on the whole thing, and that at the end of it all you will be varying from where you were at the beginning; and now they are starting to realise that

and you know, some of them are actually posted an apology, for coming in so badly” (IP6).

This change in student perceptions of KM following exposure to a course was documented in Bontis et al.’s (2006) survey of 43 alumni of a KM course at the DeGroote School of Business, McMaster University, Canada. The average score calculated for this part of the survey was 4 out of 7, which would be interpreted as an indication of a significant change. Asking students about their motivation for taking KM courses, general subject interest emerged on the top. Respondents also referred to instructors’ reputation and career-related purpose as other reasons. Overall, Bontis et al. confirmed the popularity of the KM program, based on their findings and the observation of KM course intakes in their school over years. As they pointed out, “The strategic knowledge management course that has been taught at this school since 2001 has been very well received by MBA students, and has become one of the most popular courses in their program”.

Although this kind of interest is still not manifest within the LIS literature, as discussed elsewhere, the growing interest in KM among the LIS community is considered by several researchers such as Southon and Todd (2001) as justification of the need for KM education in this sector.

9.2.4 Marketing

In the interview data there were references (from IP4 and IP7) to the existence of departmental turf *issues*, and to internal competition for resources, with people at times exaggerating the extent of their expertise in order to grasp the opportunity presented by KM. In this context, IP7 called for LIS people to make sure that they did not miss such opportunities and to market their abilities in KM.

The issue of marketing was also highlighted by IP6.

“I think our LIS students are extremely well prepared, but when it comes to competing with other backgrounds, particularly with IT area, you know they really have to be very strong and very self assured to be able to sell themselves against someone who comes from that background”(IP6).

In the opinion of IP8, the challenge was that LIS schools were not successful in marketing their programs, and in making connections with businesses and around the university. Therefore, they were not able to link their students to future employers. He considered a lack of leadership and communication skills among LIS faculties to be the main impediment to making such alliances, and one which could prevent them from taking a leadership role in the development of KM programs.

9.2.5 Curriculum change

Grounded in the interview data there were also references to the challenges of load intensity for the LIS curriculum. The suggestion that LIS programs were too full to include additional courses was made by IP4.

IP13 also pointed to the saturation of LIS curricula as being the biggest obstacle.

“The major one is the fact that curricula are already so full and you know you are teaching core information management principles and practices, but you have also got information systems and technology, you have got management...”(IP13).

IP9 also referred to the problem of overload in LIS programs, but she also mentioned the formulation of new strategies by LIS faculties, like the WISE consortium (Web-based Information Science Education), and noted the potential of these programs for allowing resource sharing among LIS schools, which could help them with the overload problem.

As a further example, IP11 pointed to curriculum change as a barrier and argued that the curriculum tends to be very well set and to change it is a difficult job.

“What I think the problem would be is that in any curricula, there is always demand that you put more and more into the program and nobody seems to suggest anything that can come out of the other end, that’s why I think the real problem occurs...to change the curriculum and if you are going to put more in, you got to take something out of the other end. Or else you got to find a way of taking a subject and evolving it” (IP11).

9.2.6 Resource implications

9.2.6.1 Human resources

As seen by the interviewees, staffing was the primary resource implication of KM programs. Hence, IP5 referred to the recruitment of qualified staff as the biggest issue for his school. He observed that there were plenty of faculty members who played some role in KM, but that they needed someone to integrate its various elements and to give it a corporate perspective. He also pointed to the ever-changing nature of the area as another factor which made finding qualified staff a serious issue:

“If you think about knowledge management more generically, there are a lot of faculty members who play some role on it, whether that’s indexing and knowledge organization, cataloguing of knowledge, building databases, etc. But if you define knowledge organization as I think of it, as right now focused primarily within the corporation and trying to identify the value that knowledge brings to the corporation, then we only have one faculty member who is really knowledgeable about that. And you think about expanding it, the biggest obstacle we have to growth would be qualified faculty, be that full time, or adjunct”(IP5).

The need for knowledgeable staff was also noted by IP11 and IP12 as the main resource implication of KM education. In somewhat more detail, IP8 referred to a lack of IT skills and practical working experience among most LIS faculty:

“Very few of the LIS faculty have any real experience with information technology. Another major resource implication is the fact that many LIS schools do not have professors with practical working experience. They are pure academics”.

The need for business experience was also stated by IP11.

“I think that a business background would certainly be helpful. Because that’s; where it is going to be applied ... some of my colleagues; I don’t think that they could teach KM, perhaps that’s why they don’t have a lot to put in their courses because they’re just not properly experienced at all” (IP11).

IP11 doubted if LIS schools could solve the problem of a shortage of required teaching staff by recruiting people from business schools. Instead, he regarded LIS schools as the proper place for KM education, and recommended that these schools seek collaboration from business departments in this regard.

“I don’t think they actually teach KM anywhere else in the faculty. It would be something that we could put to the faculty and say look, you business guys,

are probably clued up on some of this and if we put our heads together, we can give you the information retrieval, the information searching side of it. You have got to tell us what kinds of knowledge are important to you and what uses can get put to, so that we can design the organisational structures around that. We can apply our techniques to that knowledge. So that's a possibility, but if we're actually recruiting people with that background straight into LIS, I doubt if we could afford it; you know that's a hard thing to do" (IP11).

According to IP14 however, this is related to the management of change. He pointed to the lack of necessary skills among traditional or existing LIS staff, as a major obstacle to KM education, and noted that there were two views on the management of change, which were either to try to change the people that you had, or to bring in new staff and faculty from other schools to fill the gaps. In contrast with IP11, IP14 believed that it was extremely difficult to change the current staff "Because there are issues with staff performance and all those aspects of the human side of their engagement".

For a number of interviewees however, the main concern was with the matter of interest. The need for faculty members who were interested in KM was confirmed by IP2. She spoke of the reluctance and fear among some faculty to become involved with new topics, because of having no background in them, and said that:

"We expect students to learn around here, and it seems to me that we, as professors, ought to be able to learn about something a little new in it" (IP2).

IP13 also referred to his experience where "Some of my management colleagues are not particularly interested in KM and haven't kept up to speed on developments in the KM area", and underlined the need for re-educating the educators in order to change the situation in these cases. IP12 also identified the importance of the research interests of faculty members, including KM research, and said that: "It is the ability of the faculty to bring their research into the classroom and to make that bridge out to the workplace that is important" (IP12).

This said, the shortage of human resources was considered by IP13, as nothing unusual in the case of any unit such as KM that was new to the LIS program.

Finally there was support for the perceived proficiency of LIS faculties in the teaching of KM: “I know extremely proficient LIS faculty members” (IP1).

IP6 also maintained that their school had no problem with teaching staff at the moment.

9.2.6.2 Non-human resources

The interviewees also had some concerns related to non-human resources. Among these issues were inadequate access to KM systems, and problems of implementing KM software (IP4, IP2).

“We don’t have an enterprise-wide KM system, which would be really nice to be able to show students how something like that works. I try to get something like this from manufacturers, but they are very reluctant. They are usually expensive” (IP2).

And again:

“Most library schools don’t have the opportunity to basically implement even minor KM Systems” (IP4).

The high equipment costs associated with KM courses was also mentioned by IP10:

“I know that the visualization faculty member almost constantly apply for grants...because she is processing like enormous of data.”(IP10).

IP6 pointed to student complaints about the cost of books:

“The student Guild here got the university to pass some sort of policy resolution that textbooks would no longer be required. They can only be recommended” (IP6).

In the literature moreover, Bontis et al. (2006) have noted that despite the existence of a considerable volume of KM publications, insufficient resources for the purchase textbooks, cases, test banks, etc. remains a challenging issue of KM education¹⁵.

¹⁵ In addition to the above, the themes emerged for challenges on collaboration and providing partnerships with both internal and external parties have been discussed in an earlier section (8.5.5).

9.3 Determinants of KM education in the LIS sector

The survey sought to identify these factors that determined the dimensions of KM education in LIS schools. Based on the professional literature, a number of potential determinants were specified. Using a seven-point Likert scale, respondents were asked to indicate the extent of the implications for each determinant, or to name any other determinative factor that they thought should be included. As can be seen from Figure 9.2, ‘The competencies of LIS educators for teaching KM programs’ and ‘The demands of the market for knowledge-literate LIS professionals’, were considered to be very highly determinative.

In addition to the matter of educators’ competencies, however, one survey respondent referred to the incentives for and motivation of lecturers (rather than just their competence). In the case of market demands, one comment was “ Not so much the market that has to be pre-empted (if possible,) but rather anticipating the future IT hardware and software eg. ask Microsoft” (QP).

Indeed, the strong determinative role of all the other identified factors was acknowledged in this research. These determinants included:

- The culture of the schools: This in turn is largely dependent on the general climate of the institution that houses the library school. However, based on comments from the open-ended section of the questionnaire, the role of the values and procedures of the profession was seen to be considerable as for example, “Views/guidelines of professional associations; regulations and quality control procedures can slow down innovation” (QP).
- New perspectives on educational outcomes: Basically this had to do with whether educational providers still adhered to the traditional career paths of librarianship, or if they intended to target a broad-based information environment. The need for KM students to have an appropriate understanding of organisations, and of how they work, was recognised as essential by a number of survey participants. This included the comment that: “I still think most LIS schools are scared of the corporate world where KM would be most relevant. Too many schools are focused on turning out sheltered public and school librarians.”

- The nature of students who enrol for LIS courses: This would be very much dependent on the demands of the market and on the aspirations of students.
- The availability of management educators with non-LIS competencies.
- The legacy of LIS education

The legacy of LIS education was seen by some participants as having a potentially obstructive effect on initiatives such as the introduction of courses in KM.

Finally one more interesting factor from the point of view of the survey respondents was “The success of KM in companies and organizations working globally” (QP).

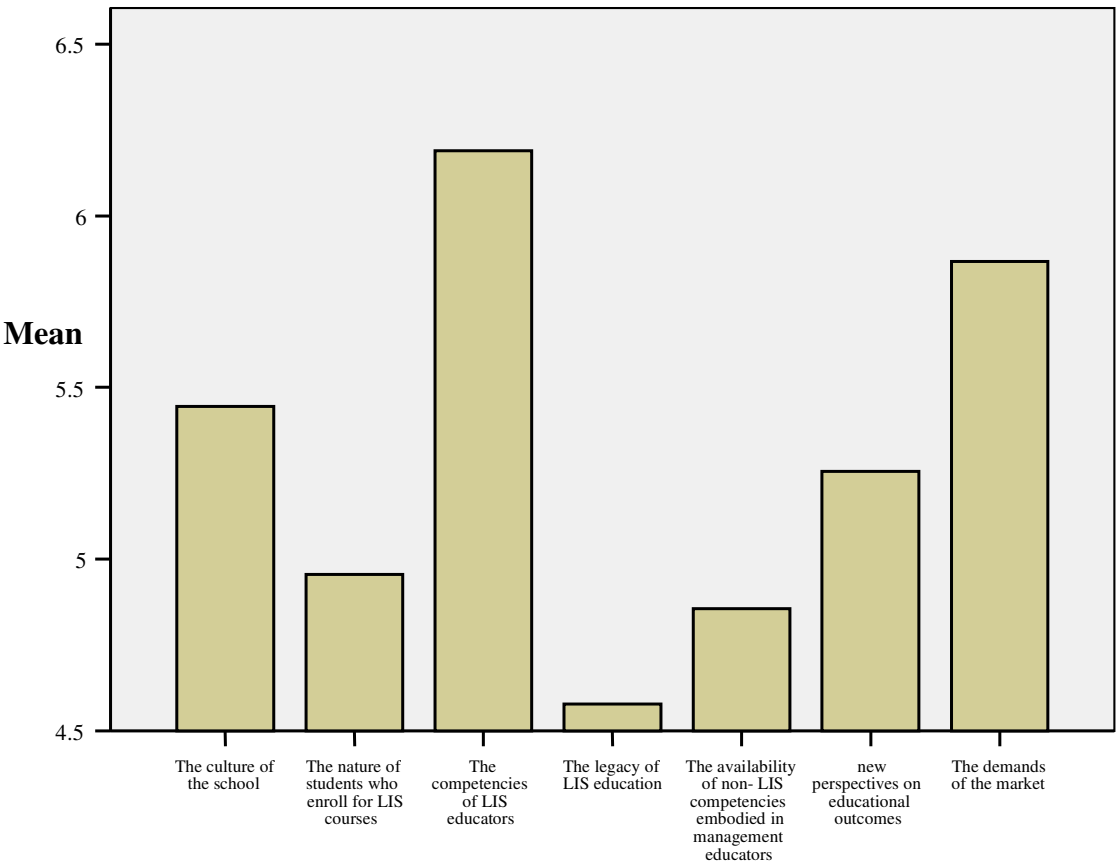


Figure 9.2 Determinants of KM education at LIS schools.

9.4 Responsibilities of LIS schools with regard to KM

The responsibilities of LIS educational institutions in responding to knowledge management have been addressed through both the survey and the interviews. To examine this issue, the survey participants were asked to indicate their level of agreement with a number of statements, or to specify any other commitments that they might perceive for these schools in terms of knowledge management. The issue of LIS responsibilities was then followed up through interviews. Furthermore, the research participants, both in the survey and interviews, were asked to offer any other

recommendations that they had for these schools in terms of potential responses to KM. What follows is a report of the survey findings, supplemented with relevant interview data.

a) It is essential that LIS schools become major providers of KM education.

As shown in Table 9.1, the majority of participants (70.5%), perceived LIS schools to be the major providers of KM education. This level of response possibly signifies a growing interest within the field in the more proactive engagement of LIS schools with KM education. A total of 16.2% of respondents did not regard LIS schools as the major providers of KM education, possibly because they recognised major contributions from not only LIS but also other disciplines. Typical of such responses was one which argued this was not our exclusive area and which claimed that LIS schools could not take an overall or leadership role [and] needed to work with other disciplines” (QP). Of course, playing the role of major educational provider does not necessarily involve working in a vacuum. The need for collaborative education in KM, has been demonstrated in the previous chapters (See section 8.5). But what is worth noting here is that the LIS community has realised that LIS schools should be more proactive in this area. An indication of this need is reflected within the interview data. The following quotes demonstrate the point.

“I think that we have a responsibility and a very strong responsibility at this time to teach it” (IP6).

And again:

“Do rather than talk. Stop talking about things and start doing things. And it’s only by actually having the experience, and putting that experience back into the LIS curriculum. Let’s anything will develop” (IP14).

Lastly:

“I say try it, you will like it....you can always drop the course if it doesn’t work for you” (IP2).

Support for a major role in KM came also in the form of recognition of KM as a necessary ingredient of LIS education.

“KM is I think an important part of management in general. So if LIS schools want to prepare the next generation of library managers then it does have the responsibility to make sure that they understand basic KM theories issues and practices. That’s probably the main responsibility” (IP13).

And again:

“I think we need to understand that this is a viable toolset in a sense, a viable curriculum, in all of the world” (IP12).

In addition to the above recommendations for LIS schools to develop KM courses, the need for this sector to engage more in KM research was demonstrated in the interview data (See section 7.7.3).

Whether or not LIS schools should aspire to play the major role in education for KM remains a moot point. Here, an observation by Koenig (1999) is apt, where he nominated LIS programs as potentially at ‘centre stage’ of KM education but added that there was no one ideal place and that education for KM was likely to emerge in various places.

b) The current response by LIS schools to the need for KM education is inadequate.

It emerged that 60% of participants to the survey considered the current response by LIS schools to the needs for KM education to be inadequate. Additionally, a relatively high percentage of respondents (27.6%), was unable to comment on this statement, probably because they were not fully aware of current changes, or they were unsure about the extent of the needs of KM education. An additional comment here was that “LIS schools need to take a holistic approach by fostering an environment in which KM is integral part of the curriculum and not just taught as one module or subject separated from the others” (QP). This perceived need has already been addressed in an earlier section of this research (See sections 7.3, 7.4). At this point it is necessary merely to add a final interviewee’s observation on this issue:

“I would be inclined not to look at KM on its own but I think that schools need to just determine how they are going to reconceptualize how they educate people and you know to what end and what I mean by that is that I think that the I-school has done this by focusing on information and some of that they are doing it by focusing more on how do we ensure that our graduates contribute to their community, whether that is a research and teaching community within the university, a learning community in a school, a pocket based community in an organisation like corporation” (IP7).

The need for increased involvement of LIS faculty with KM education has also been stressed by Sutton (2007b), arguing that it could boost the relevance of and relationship between the two fields.

c) LIS schools need to rethink their mission and strategies in respect of knowledge management.

There was a high level of agreement (71.9%), among respondents that LIS schools needed to rethink their mission and strategies in respect of knowledge management. A relatively large percentage of participants (19.4%), chose the ‘*don’t know*’ option of the question. This need of course, is not confined to KM. However, over last few decades, library science and its education have experienced sudden, discontinuous changes, with infusions/ invasions from other cognate fields and as a result LIS schools need to renew their missions and strategies to keep a fresh and holistic look at where the profession is going (Myburgh 2003; Wilson 2002a).

d) LIS schools need to cooperate with other disciplines in the design and implementation of KM programs.

Interestingly, 99.1% of participants confirmed the need for LIS schools to collaborate with other disciplines in the design and implementation of KM programs. Additional comments on this issue included:

“LIS schools could be more flexible in curriculum design and be willing to collaborate and cooperate with other areas in the wider information domain to develop and expand offerings to include cross disciplinary, interdisciplinary and multidisciplinary options for students to choose among a range of courses (subjects) and specializations” (QP).

And again:

“LIS programs on their own cannot provide a complete KM education but LIS programs need to think about which pieces make sense for them to offer in conjunction with other disciplines on campus” (QP).

And:

“They need to develop strong ties with business and communication faculties to help prepare students to sell their KM skills in the labour market” (QP).

Interview data on the importance of collaboration with other interested parties has been discussed in an earlier chapter. (See section 8.5.3). Interviewees recommended

that LIS schools not only make formal partnerships with other university departments, but also engage in informal liaisons with colleagues from other units. In this context, but also recognizing the unique contribution of LIS schools (See section 8.5.2), IP14 recommended that LIS schools link with schools such as those in Business and Computer Science, but without actually joining them. The need for such connections is so urgent that IP5 recommended LIS schools to “Try to identify one or two partners, even from the very beginning”.

Building these liaisons, of course is not always easy, and would necessitate attention to aspects of professional and organisational culture. In this regard IP9 observed, “One thing from my experience...is that Schools of Business tend not to have as many relationships with LIS as computer science, or departments of communication and some other fields. So I think there needs to be more cross-fertilization between schools of management and schools of LIS” (IP9). The current situation, however remains unsatisfactory as IP7 comments “Many schools see themselves as really an interdisciplinary centre, but don’t tend to engage in any interdisciplinary work to a large extent. So they almost see their own discipline as interdisciplinary rather than the discipline being something that lends itself to interdisciplinary” (IP7).

To help in the development of a collaborative cultural atmosphere, interviewees recommended that LIS schools provide opportunities for faculties to meet people from other disciplines who are interested in the field.

“To commit to this multidisciplinary topic they need support say, so it’s exciting for people to get enabled to talk to other people in another field who are interested in it” (IP2).

Additionally, IP6 recommended that LIS faculty try to keep up-to-date with what was going on by having informal talks with colleagues.

The strong appreciation of the need for collaboration with other disciplines in KM education is also evident from the results of other research. In their investigation of the perceptions of the heads of 12 LIS schools, Rehman and Chaudhry (2005) for example, reported that “There existed a strong interest in offering KM courses, cultivating collaborations with business and computing schools, and developing strategic partnerships with industry”. And again “Research suggests that collaboration seems to be the most important strategy in making the KM courses successful”.

e) LIS schools need to cooperate with employers in the development and provision of KM programs.

The need for LIS schools to establish cooperation with employers in the development and provision of KM education was acknowledged by a large majority of respondents (85.6%). Only a small minority of respondents (3.8%) disagreed with this suggestion. Further support for this action emerged in the open-ended section of the question.

“If LIS schools are to have any credibility in teaching KM they need to have strong links with industry and to recruit staff with actual KM experience not just recycle their LIS academics” (QP).

And again:

“Working with expert networks as well as content is critical for KM and it is essential to integrate business and management professionals more into LIS programs” (QP).

Within the interview data also, IP7 recommended LIS people to “Develop collaborative relationships and be a part of teams in organisations that all of that provide the LIS professionals with the contact there with all; the ability to make connection and the systems knowledge to try to identify and document where knowledge exist in the organisation in the minds of workers; people who employ there” (IP7). The essence of this commitment becomes more obvious in the context of Hawamdeh’s observation that “A major challenge is to deliver curricula attractive to both students and their prospective employers”(Hawamdeh, Suliman 2005, P.1204).

f) LIS schools need to reassess their curricula continually, in order to keep pace with the evolution of KM.

Curiously, a considerable percentage of participants (43.39%), did not comment on this statement. Those who did answer, however, demonstrated strong support for the continuous updating of LIS curricula (with 95% agreement). It is note noting that among respondents to this statement, no one appeared to be strongly opposed to such renovations. The need for continual revision of LIS curricula in light of ongoing developments in knowledge management is clearly expressed within the professional literature. Hence, “The rate of change prompted by the advent of knowledge

management is such that we are in clear danger of being left out as the framework of career opportunities develops and changes over the next few years” (Reardon, 1998).

g) In responding to the challenges of knowledge management, LIS schools must pay attention to the skill sets of students.

It is interesting that 88.5% of participants agreed with the need for LIS schools to pay sufficient attention to the skill sets of students with regard to KM practice. (Combining both *agree* and *strongly agree*). Only 6.7% of respondents did not agree with this statement. Among the comments on this part of the survey, was a call for LIS schools to “Map LIS and KM competencies so that students understand where their skills etc. can support KM practice” (QP). The interview data also contained calls for LIS schools to consider student needs.

“There are always what we call hidden issues and sometimes what we have to do in library schools is try and read the road mapping in front of us and try and forecast to the best of our ability what students need to know that is not what they have to know, it’s what they need to know” (IP6).

And again:

“I think understanding students and students’ needs and who really is going to pursue this and not build expectations too high there, I’m not sure that you know, our experience is that there are lots of students that shy away from this” (IP5).

Additionally, interviewee IP7 called upon LIS schools to prepare students for applying what they learnt in class to workplace situations.

“I think we just got to be able to develop that knowledge, skills and abilities in our students but also help them to be able to articulate that and then make it work in an organisation” (IP7).

This includes the need for LIS schools to prepare students for work in non-traditional settings as reflected in the following quote.

“We need to prepare our people who are going into ...libraries that are in industry, in research development firms, in non-governmental organisations or newspaper, health care, you know they are doing KM” (IP2).

To design an actual program based on student needs, IP14 recommended that LIS schools establish an external advisory board to talk to a whole range of stakeholders

including students and their potential employers, and see what sort of skills they wanted graduates of their programs to have.

The need for today's students to regularly update their knowledge, and skills has been pointed out by Hawamdeh (2003). This need has also been approved by Reardon (1998) in terms of knowledge management when he stated that "The LIS Schools need to develop education and training that will meet the new professional demands of knowledge management and demonstrate the relevance of courses and understanding of the competences which must be developed in knowledge management students".

h) In responding to the challenges of KM, LIS schools must pay attention to the skill sets of academic staff.

89.4% of participants agreed with the above statement, while 8.7% had no clear view. In the literature, Southon and his colleagues have argued that "The commercial focus of the educational institute means that initiatives will be more sensitive to market opportunities than to the current skills and interest of current operational staff" (Southon, G, Todd & Seneque 2002, P.1057). In the interview data, however, were recommendations for LIS schools "To find faculties who know about KM or are in willing to learn about it" (IP2). So the first step as IP9 observed, would be to attract faculty. IP9 advised LIS schools to tap into resources that were already available on campus. The way to do this was to "Fill faculty positions with people, who had a wide base of information rather than having the courses taught by someone who was very much grounded in the library field" (IP1). The importance of having active faculty in this area is also demonstrated in the following quotes:

"You know we are not very expert in that. We are struggling with this; I do not know how to recommend it. Again I would say strong faculty access and faculty that are really active at the adjuncts that are at the cutting edge of it are important" (IP5).

Interviewees made suggestions intended to help LIS schools in finding suitable staff.

"If they [LIS schools] want to see what potential is out there, you know, run of a conference or 2 or 3 days seminar at school on what KM is and what they can do and then see perhaps if someone would be interested in taking additional courses and then hire in special faculty or houses staff with other schools" (IP4).

“I think they need to start looking for faculty that are coming out of KM programs and I believe that a lot of this [goes] down to the faculty expertise and the faculty research agenda. And we need to start hiring faculty that know how to do KM and then the change comes from within, which is the best kind of change” (IP12).

i) LIS schools need to train their educators before they introduce KM programs.

The need for LIS schools to train their educators before introducing KM programs was agreed by 77.9% of respondents. A considerable percentage of participants (17.3) appeared to have no opinion in this regard. Discussing the resource implications of providing KM education in LIS schools in an earlier section (See section 9.1.6.1), the interviewees pointed to staffing as a major impediment to this involvement. As argued in that section, although the shortage of relevant skills among LIS teachers might be a hindrance, the main concern would be with their level of interest. So, as suggested in the literature, schools need to make sure that sufficient professional, social and emotional support is available to teachers (Mokhtar 2005).

Table 9.1 Percentages of agreement/disagreement with statements about the responsibilities of LIS schools with regard to knowledge management.

	strongly disagree	disagree	don't know	agree	strongly agree	Overall ¹⁶ (mean)
a) It is essential that LIS schools become major providers of KM education.	2.9	10.5	16.2	48.6	21.9	Agree
b) The current response by LIS schools to the needs for KM education is inadequate.	1.9	10.5	27.6	42.9	17.1	Agree
c) LIS schools need to rethink their mission and strategies in respect of KM.	-	8.7	19.4	50.5	21.4	Agree
d) LIS schools need to cooperate with other disciplines in the design and implementation of KM programs.	-	1.0	-	46.2	52.9	Strongly Agree
e) LIS schools need to cooperate with employers in the development and provision of KM programs.	-	3.8	10.6	43.3	42.3	Agree
f) LIS schools need to reassess their curricula continually, in order to keep pace with the evolution of KM.	-	1.7	3.3	8.3	86.7	Strongly Agree
g) In responding to the challenges of KM, LIS schools must pay attention to the skill sets of students.	-	6.7	4.8	37.5	51.0	Agree
h) In responding to the challenges of KM, LIS schools must pay attention to the skill sets of academic staff.	-	1.9	8.7	62.5	26.9	Agree
i) LIS schools need to train their educators before they embrace KM programs.	-	4.8	17.3	39.4	38.5	Agree

¹⁶ The following scoring has been designed for the purpose of marking the overall perceptions of respondents in section 9.3:

1 to 1.44= Strongly disagree

1.45 to 2.44= Disagree

2.45 to 3.44= Don't know

3.45 to 4.44= Agree

4.45 to 5= Strongly agree

There was a considerable volume of additional comment from the survey and interview participants on this question. This mostly addressed the promotion of KM perceptions, the promotion of LIS visibility, attention to market demands and looking at best practices. Below is a report of these findings.

9.4.1 Promote KM perceptions

As there is still debate among the profession at large, as to the real nature of knowledge management, it was hardly surprising that interviewees had much to say about the need for LIS schools to promote KM perceptions among their staff, so as to understand the essence of KM, to take an integrative approach to KM education and to increase students awareness of KM.

9.4.2 See the essence of KM

In the interview data, there was a view that LIS academics should know about KM, and that, although it might be different from what they have previously studied, it was still very much relevant. The following quotes demonstrate the point.

“Basically getting deans and directors to recognize that it is part and parcel of what we are doing .It is not something outside the curriculum. It’s something basically, it’s the next step in the curriculum...well, first of all we needed to get more deans and directors who understand the true nature of what KM is” (IP4).

And again:

“I think to a considerable extent it is more about habit of mind or an attitude towards making sure that we are not simply looking at the print material supplemented by the electronic resources, or just the electronic resources, but rather we’re looking at what we say about it, which is the whole world of ideas, information regardless the format including you know what’s in the air in peoples’ mind and how we can really capture that to make it available to move the organisation forward”(IP7).

Recommendations were also offered by survey participants as to how to achieve a clearer understanding of KM.

For IP15, the issue was really that of how KM education would be perceived.

“I think there is a danger that if we are not careful about the education of young professionals coming into the field, about the importance of knowledge

management and its value and how you begin to measure its value and need to have continues improvement of your knowledge management systems; that there could be a danger if knowledge management becomes; is perceived to be just another commodity like technology...I think it probably needs to be defined very carefully” (IP5).

To help promote a better understanding of KM, therefore, interviewee IP15 asked LIS schools not to stick with the terminology, and to be sure to understand the essence of knowledge management.

“We have to move with the language. KM has never been a term which is comfortable in my vocabulary. For me it is about organisational improvement” (IP15).

It is of course, not always easy to change perceptions. But, as IP2 observed: “Sometimes I think if you are convinced that it is a good thing, you have to fight for it” (IP2). Accordingly, there remains a need for LIS schools to understand what KM is and to try to change perceptions of KM among their staff.

9.4.3 Take an integrative approach

In addition to the need for LIS people to comprehend the similarities between and mutual relevance of LIS and KM, and to learn about it, they also need to understand the multidisciplinary character of KM. For many of the interviewees, LIS schools seemed to look at KM through their own specific lens. So what schools needed to do was to expand their perceptions in this area, and learn to look at it from all of its perspectives. This view is reflected in the following quotes:

“I would think that a bit of shift in perspective is definitely needed in the LIS community. I actually found a lot of literature on KM in libraries... but I really didn’t see much of discussions or perspectives that look at it from a holistic/ an integrative perspective. They were all looking at it from their own perspective” (IP3).

And again:

“We should offer it with an open mind... some LIS professionals think we are the only people to be involved in this and other LIS professionals, including Tom Wilson, think it’s a joke... And then there are others of course who are half-way, like Klobas and so; I think that we have a responsibility and very strong responsibility at this time to teach it with an open mind” (IP6).

Lastly:

“There are different components in KM...and you have to cover all of them and its quite a large area” (IP10).

In this context, a number of survey respondents highlighted the need for LIS schools to embed more business and management elements in their curriculum. Typical of these comments were the following:

“LIS schools must foster and create strong leaders with an interdisciplinary business and management background” (QP).

“They need to just change the terminology used with more project management and business module” (QP).

“Include strong marketing strategies in the curriculum to assist with *knowledge push* out into the client base” (QP).

Lastly, relevant to the conduct of KM education, were calls from survey participants for LIS schools to provide opportunities for practical work in KM, and to promote research in the field, especially by students.

9.4.4 Increase student awareness

In addition to the above recommendations, LIS educational institutions need also to increase the awareness of their students about what is going on, and what they need to learn to keep abreast of changes happening in the wider society. As one interviewee observed:

“I think one of the things that we need to do is to make sure that students who are coming into our programs know that their education is going to be very broad ... that we are not narrowly educating our people, we are not giving them the skills just to work in a traditional library” (IP1).

And again:

“I think library and information schools, if they are doing justice to the graduate, they need to have an awareness of KM, if nothing more, they need to really allow the students to understand that continuum of where information and knowledge in organisations have a dual approach and the dual can play together to create good outcome for organisations. That KM is making stronger by good information management, and I think information management is strengthened by a broader engagement with KM” (IP15).

To absorb students into the KM field based on a broader vision, IP6 recommends LIS schools to “Try to get them [students] to think about the issues and the principles and everything” (IP6).

Among relevant comments from the survey on this issue was a report from a successful case which, according to the respondent, focused on teaching their students to think broadly about KM (QP). Finally, one survey respondent urged LIS schools to “Ensure that their students are aware of the limitations of KM and the many critiques of it (e.g. that KM is a creation of consultancies and is ‘old wine in the new bottle’); or common misuse of terminology in KM discourse (e.g. confounding of tacit and implicit knowledge)” (QP).

9.4.5 Promote the visibility of LIS

Reviewing the literature, a lack of visibility of LIS professionals has been considered as a major obstacle to employers appreciating their potential contribution to KM (Ferguson, Sarrafzadeh & Hazeri 2007). The need for LIS schools to do more about marketing their graduates was commented on by a survey respondent who stated that:

“I still think that employers don’t know the full value of LIS graduates” (QP).

There were also recommendations from interviewees that LIS schools should promote the visibility of their programs. In this regard, IP1 believed that KM courses at LIS schools just needed to be advertised.

“KM is already included in any good curriculum. Perhaps it needs to be advertised...we need to do better public relations about our programs and the capabilities of our graduates” (IP1).

This view was supported by IP7.

“We LIS people have to be very active in marketing our programs, our services” (IP7).

9.4.6 Consider market demands

Grounded in the interview data, there was a view that LIS schools needed to consider market demands in making decisions on providing KM education. The following quote demonstrates the point:

“I recently had a corporate colleague who said that we should create a certificate in KM, but I don’t think we have much demand in our school” (IP9).

On the other hand, there were claims that the demand would be increased if schools promoted student awareness about KM and its potential. There was also a suggestion that if internal demand was not adequate, then LIS schools might offer their programs externally.

“I think if you want to initiate a program you’ve really got to work out if there are students who say they want to do it. Now in [our university] we offer our studies externally. So we don’t only look at the local market” (IP6).

9.4.7 Learn from others

Interviewees recommended that LIS schools should try to learn from others, and in particular from those who were successfully running KM programs. As IP2 observed:

“As soon as they get efforts, I think they find it difficult, because many of them haven’t experienced KM in the world; so I say to them; you know look at some best practices among LIS schools, they are doing KM and you know it would be great to share experiences” (IP2).

9.4.8 Further Suggestions

In response to requests for specific suggestions for improving KM education within LIS schools, the following responses were received from the survey participants:

A number of respondents referred to the need for “expeditious responses to developments in the workplace”, “monitoring job destinations of graduates” and “offering continuing educational programs in association with professional organisations”. There were also proposals for the inclusion of strong practical

approaches to curricula and learning from case-studies by emphasising failures in the past. Also recommendations were offered for creating “A conducive learning culture before initiating KM education” (QP).

9.5 Conclusion

Based on the findings in this chapter, people emerge as the main issue of concern for KM education in the LIS sector. A partial or improper understanding of KM among the LIS community, and a lack of appreciation of the value of KM education among LIS students and educators, are key issues facing KM education. These problems can be addressed, not only by initiating KM programs and promoting the KM concept, but also by marketing these programs. Accordingly, the creation of a positive cultural background for KM education in LIS schools, and the promotion of higher LIS visibility in the outside world would be considered as the first priorities. Attention must also be paid to the resource implications of introducing KM programs, particularly those in recruiting proficient staff both willing and able to help expand the programs beyond the more traditional realms.

Chapter 10: Conclusion

10.1 Introduction

The present research project was designed to investigate major issues to do with the implementation of knowledge management education within the LIS professions. The major objectives of the thesis therefore, were to clarify the educational requirements of future knowledge-literate library and information professionals, and to develop a new educational framework that reflected the changing needs of the profession. There follows an outline of the research questions that guided data collection and analysis, along with a conclusion reached for each question.

10.2 Research questions and the study findings

1. Are LIS schools emerging as major providers of knowledge management education?
2. What are the different perspectives on KM education exhibited by LIS professionals?
3. What are likely to be the most effective means of providing education programs in knowledge management for the LIS professions?
4. What is likely to be the most appropriate course content for knowledge management programs in library and information science schools?
5. Can existing LIS curricula meet the needs for knowledge management education or is input from other disciplines needed?
6. What are the core competencies for LIS people operating in knowledge management environments and how much current curricula can support them?
7. What are the main roles and responsibilities of LIS educational providers with regard to KM?
8. What are the gaps between current levels of provision and those needed within the next five to ten years?

Since KM courses are offered by various educational providers, the researcher first sought to find out if LIS schools were emerging as major providers of KM education. While Ruth et al. (2003) argue that KM education has mainly been situated in the

business and engineering schools, evidence that the LIS sector is leading the drive towards knowledge management education has been displayed in the results of previous research (Saito 2007; Sutton, M.J.D 2002; Sutton, Michael J.D. 2007). The dominant position of LIS schools in this area has also been reported widely in the professional literature (Chaudhry, A & Higgins 2003; Srikantaiah 2004). In the case of the current research, the data analysed in section 8.5 is an indication of the prominence of the LIS sector in KM education, with in many cases, interviewees reporting no major competition from other units in offering KM courses at their universities. KM education of course, is not just limited to the academic institutions. Within the literature, there are signs of emerging KM educational programs in conjunction with corporations (Shurville et al. 2005). There are also indications of the growth of educational certification programs outside academic venues (Sutton, Michael J.D. 2007). However, such programs are still very much in the minority.

The second question sought to identify different perspectives on KM education within the LIS sector. Key to this was the issue of whether or not KM was likely to prove to be a durable phenomenon, and if so ought the LIS sector to be involved in it and how LIS schools might respond. It emerged that KM was seen as likely to remain important, and that the LIS sector should seek to be more proactive in the matter of KM education. Only a small minority of participants were in disagreement with these views, reflecting that minority pattern in the literature where scholars such as T.D. Wilson (2002b) have maintained a determined opposition to KM and its place in LIS. The willingness of the profession to learn more about knowledge management and to seek involvement with KM initiatives at strategic levels, often in non-traditional workplace environments, is reflected in the significant response to proposals for the expansion of a KM element in LIS curricula raised in this project.

The next question addressed in the research was about the most effective means of providing educational programs in knowledge management for the LIS professions. If the LIS community saw the need for KM education at the academic level then, how did it think these should be offered. The research findings indicate that elements of KM are very much relevant to LIS education, both at an everyday library-oriented level, and in terms of the future, and the need to look beyond the confines of libraries. LIS schools not only need to offer separate KM programs, but also KM concepts

should be a pervasive presence in current curricula. In the search for a wider focus however, it is important, not only that relevant concepts are retained and developed, but also that these developments take place within the broad ethos and value framework of the LIS professions.

The fourth question is about the most appropriate course content for KM programs in library schools. Because of the multidisciplinary nature of the curriculum, the researcher sought to find what and where, the emphasis should be in different components of these programs. KM encompasses a wide range of subject areas. And within each area, the content of the same modules across disciplines, or from one department to another, remains diverse. So, considerable differences exist in the granularity, scope and depth of KM-related courses. This research therefore, has sought to help attenuate the effects of the lack of consensus on the content of KM curricula. As noted by Amos and Chance “The very nature of knowledge suggests that knowledge management is unique for every organisation” (Amos & Chance 2001, P.51). More than this, the need for and the context of KM programs, divergent from one place to another, may influence the flavour of KM studies in each particular case. Therefore, it is nearly impossible to name the exact modules that should be undertaken by LIS schools. However, there is recognition within the literature that “While KM approaches must be organisation-specific, there is some common ground in overall approaches, and popular tools and techniques” (Abell, Angela & Oxbrow 2005, P.9). Although the needs and disciplinary homes of programs are still likely to be diverse, this implies that there will be some common cores in the KM curriculum. The research findings in this part of the study revealed that LIS curricula need to put more focus on the knowledge end of the information-knowledge continuum. The need for LIS schools to take an integrative approach to KM education, while also considering the suitability of these programs for their emerging markets, has also been highlighted in the research results. Whereas the importance of various elements in KM curricula has been indicated, it is worth qualifying this acceptance with regard to level and context.

As with mainstream LIS activities, the practice of KM is broad and complex, with foot soldiers as well as field marshals involved. The depth and breadth of proposed new curricula will in all likelihood take such factors into account, but it is nonetheless

worth drawing attention to them. As with level and depth, moreover, the question of context is not insignificant.

In the mainstream (non-LIS) arena of KM practice, there is considerable variation in structure, content, culture and strategy, as between one industry or industry sector and another. Likewise, when it comes to educational preparation for LIS professionals, there will be implications stemming, not only from the differences between it and the KM mainstream, but also between different sectors within LIS.

It is important not to make too much of such differences, and to bear in mind the key elements of resource management and the sources of (frequently intangible) value common to attempts at managing knowledge in all kinds of organizations.

The purpose of the fifth question is to investigate whether LIS schools need a contribution from other disciplines in designing and conducting KM education programs.

To develop a symmetrical, appropriate curriculum, it is worth noting that KM is a collaborative and cooperative field, which demands contributions from people from a range of field disciplines. Indeed, “Given the fact that knowledge management is an interdisciplinary area and requires the participation of people from different disciplines, designing a balanced and practical knowledge management curriculum will always be a challenge”(Hawamdeh, S et al. 2004, P.606) . Hence, building a clear profile of the appropriate fields to be involved in KM education, and the main contribution that might come from each discipline, could help to make curriculum development an easier task.

The study results as discussed in chapters 7 and 8 highlighted the necessity of taking a spectrum approach to KM education, and emphasised the urgent need to take collaborative approaches, particularly with the business schools and the industrial sector.

To help the development of an appropriate KM curriculum, the researcher sought to identify the core competencies of LIS people operating in knowledge management environments, and the extent to which current LIS curricula could support the development of these competencies.

The literature continues to highlight a shortage of business skills among LIS professionals, a shortfall reflected in high demand for such skills in the workplace. This view was endorsed by a third of the respondents surveyed in the research, who were of the view that LIS curricula were making little contribution to increasing the business acumen of students.

The evidence from this research and elsewhere suggests that, while LIS curricula to an extent, support the promotion of KM competencies among graduates, in order for the LIS professions to operate more effectively in a KM environment, additional competencies will be required. Particular emphasis has been given in the literature, and in responses to the survey, to the need for LIS courses to contain much more in the way of business and management content in order to equip future professionals for work outside the more traditional LIS environments.

Clearly, in order to be able to relate their professional skills and theoretical knowledge to the emerging and frequently commercial domain of KM, LIS educators need to address this organizational and management dimension as a matter of urgency. In particular, they need to think about the *people* aspect of KM, and find ways to equip students and library staff with the ability to work in a range of different kinds of organizations. Some of these calls for competency enhancement are strongly prescriptive and at times, quite sweeping in scope, with the aim apparently being that of producing LIS professionals who can not only understand, but also apply in practice, the principles of human resource management, financial management, operations management and strategic management.

On the other hand, it appears that LIS professionals are already equipped with a range of IT and communication skills, which should stand them in good stead as they seek to embrace change in both curricula and practice.

Finally, the growth of interest in KM within the LIS community, and the ongoing debate about competencies, will continue to impinge as matters of urgency on the work of librarians and library educators. This includes the challenges of identifying those competencies that exist or are needed, and working out ways of embodying coverage of such elements in future curricula.

Learning about the above issues, the researcher then sought to figure out the major challenges associated with KM education for the LIS discipline, and to identify the main roles and responsibilities of LIS educational providers with regard to KM.

It is clear from the findings of this study that the main challenges associated with KM education in the LIS discipline are to do with people, and with changing the perceptions of people towards KM and the value of KM education. The need for these educational institutions to promote KM perceptions among both students and educators, and to put more emphasis on marketing their programs and their graduates, has been widely emphasised by the research participants. Furthermore, schools not only need to update their teaching processes and methods, but also to engage in KM research that can be used to inform teaching.

The final question that guided this research was to do with any gaps between current levels of provision and those needed within the next five to ten years. As Lasic-Lazic et al. argue, the field of information science “Is likely to be more exposed to unpredictable changes affected by the development of technology, and the curriculum has to accommodate great flexibility and be easy to adapt and manage” (Lasic-Lazic, Slavic & Zorica 2003, P.6). Arguably, KM is a typical example of developments in the knowledge-based era. The LIS curriculum as indicated in findings, has incorporated some of the elements of KM, and more recently to some extent, it has been responsive to the future needs of KM education. However, the entire LIS curriculum is still in need of revision including in its treatment of fundamental concepts and of ongoing developments in the field.

10.3 *The main research outcomes*

Emerging as the major outcomes of this research were the findings that LIS schools need to broaden the scope of their programs, and to develop KM and its associated concepts throughout the LIS curriculum. To support these objectives, LIS schools would need to forge new missions and strategies. It is also important for LIS schools to improve perceptions of KM within the LIS education community, and to take an integrative approach to KM education, one that engages with KM practice and integrates research into teaching. To this end, it is recommended that they involve

other parties interested in KM, including academic units as well as industries and practitioners.

10.4 Contributions and implications of the research findings

As KM education is still at the development stage, there remains a real need for input from research into the subject in general and its specific components. For LIS schools, there is still ambiguity about the need for, and the level of engagement with, KM education, and the way this should be achieved. Several participants in the current research explicitly acknowledged the importance of doing research in this area, in order to identify the barriers and opportunities that exist if LIS education is to encompass KM.

The present research therefore has sought to shed light on the perceptions of KM in the LIS community, and to help contribute to a consensus among LIS educators on the essence of KM and what it means to the LIS professions. It has also sought to assess the extent to which LIS education has been responsive to developments in KM. The findings should assist educational institutions as they seek to respond to demands for KM education, including in the design and implementation of programs for new markets. The feedback from LIS educators with direct and extensive experience of teaching KM courses should be particularly helpful to those contemplating the provision of new courses.

10.5 Research limitations

This research into KM education was directed at identifying elements of change and relevance in the context of education for LIS professionals. The results therefore, while perhaps relevant to mainstream KM activities in management and business schools, are intended to be applied largely in an LIS context.

In the LIS context, whereas the intention had been to collect data from the entire international LIS community, in the event, responses came mainly from a group of

English speaking countries. Consequently the results can be generalised only in the context of those English-speaking countries.

Furthermore, the research looks mainly at the implications of KM from the viewpoints of LIS educators. Arguably however, the true test of KM curricula could lie in their relevance to the job in hand, and in the perceptions, not just of educators but also of their clients, be these students or employers.

10.6 Directions for future research

It is important to bear in mind that much of the literature on KM, as with participation in this research, has emerged from within the English-speaking world. It can be argued of course that this lends general validity to the results in that, for example, universities in these countries have long played a leading role in education for information science and since then have been a model and pathfinder for development of the profession (Lasic;Lasic et al., 2006). However, apart from coverage of important research and practice in countries such as France and notably in Scandinavia, it would be useful were additional research available that focused on the perceptions of LIS professionals in other non-English speaking countries.

As with the matter of geographical distribution, there is a clear need to investigate education for KM from the viewpoint of different stakeholders, and in particular those of graduates and employers.

Another potentially fruitful field of research would concern the involvement of organisations from outside the LIS sector in KM. In the current study, no attempt was made to compare perceptions of KM in different sectors. A comparative study of KM education in different sectors would therefore, be useful. This could not only help to monitor the strength of different sectors in KM education, and facilitate the conduct of a more collaborative form of education for KM across disciplines, but also it could help intending students to make informed choices in terms of KM courses.

Finally, as emerged during the interviews for this thesis, there is a real need for the writing of case studies in the area of education for KM. Recent research conducted by Sutton and resulting in two cases involving graduate programs in KM, is something of a benchmark, and the writing of further such cases would mark a major contribution to curriculum development in KM.

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¹⁷ Reference list formatted according to Harvard system of referencing (with some minor modifications to comply with RMIT Thesis Guideline).

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Appendices

A) Questionnaire

The implications of Knowledge Management (KM) for Library and Information Science (LIS) education

My name is Afsaneh Hazeri and I am a PhD student at RMIT University in Melbourne, Australia. My thesis topic is "The implications of knowledge management for library and information science education". In this thesis I will be investigating perceptions of and attitudes towards knowledge management education within the library and information professions using a number of international mailing lists with the kind permission of the list owners. The data gathered in the survey will contribute to the design of protocols for a number of Australian-based case studies.

In case you have already completed an earlier survey circulated by one of my colleagues I should point out that her survey was concerned with the implications of knowledge management for the LIS professions, whereas mine is concerned with its implications for LIS education.

I believe that you can offer valuable insight to this project as well and I would be extremely grateful for your help in an exercise that I believe will be of real value to the library and information professions. Your participation should take around 30 minutes of your time and would make a major contribution to the outcome of my research project. A summary of results will eventually be available to all who participate.

My research supervisor is Professor Bill Martin who can be contacted for any enquiries related to the project or its adherence to the formal privacy and ethical policies of RMIT University.

Afsaneh Hazeri (BIT PhD student)

E61534@ems.rmit.edu.au

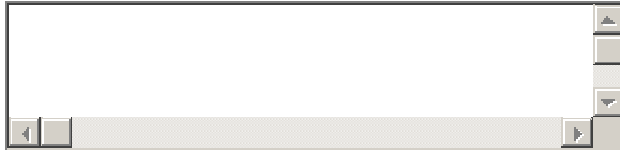
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As knowledge and its related terms cover a wide range of scope, please take time to consider the following brief definitions throughout the questionnaire:

For all its currency, knowledge management remains an ambiguous construct and one that is highly contextual in nature and application. The same is true of knowledge itself and particularly of the familiar dichotomy between explicit knowledge and tacit knowledge. For the purposes of this project *explicit knowledge* is defined as: Knowledge that can be put down on paper, formulated in sentences or captured in drawings. Being formal and identifiable it is easier to capture and transmit. *Tacit knowledge*, on the other hand is knowledge that is informal, personal and hard to pin down, and so subject to individual awareness that it cannot always be articulated. These perceptions of knowledge are embodied in various definitions of knowledge management some examples of which are presented in the first Question.

1. Which of the following definitions of knowledge management do you find most acceptable?

<input type="checkbox"/>	a) The acquisition, sharing and use of knowledge within organisations, including learning processes and management information systems.
<input type="checkbox"/>	b) The creation and subsequent management of an environment which encourages knowledge to be created, shared, learnt, enhanced, organized for the benefit of the organisation and its customers.
<input type="checkbox"/>	c) The process of capturing value, knowledge and understanding of corporate information using IT systems in order to maintain, re-use and re-deploy that knowledge.
<input type="checkbox"/>	d) The capability of an organisation to create new knowledge, disseminate it and embody it in products, services and systems.
<input type="checkbox"/>	e) The use of individual and external knowledge to produce outputs characterised by information content and by the acquisition, creation, packaging or application and reuse of knowledge.
<input type="checkbox"/>	f) Other (Please explain if you have a preferred alternative definition)



2. How do you feel about this statement:” KM programs should mainly be offered as full time-courses at universities”?

- ☒ a) Agree- Please go to [Question 3](#)
- ☒ b) Disagree- Please go to [Question 5](#)
- ☒ c) No idea- Please go to [Question 5](#)

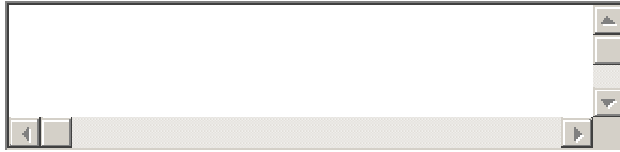
3. Does your answer apply to: (Please tick as many as you wish)

- ☐ a) Undergraduate degree courses
- ☐ b) Postgraduate degree courses
- ☐ c) Non-degree courses

4. How would you rate the potential contribution of the following schools/ departments to the provision of education for KM?

	Zero	Low	Moderate	High	Very High
a) LIS Departments	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
b) Business Schools	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
c) Computer Science Departments	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
d) Information Systems Departments	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

If you think some interdisciplinary combination of the above schools is necessary, please specify it here (for e.g. a+b). You may also add the name of other schools or interdisciplinary groupings that you think might offer these programs.



5. Can you indicate which activities listed each of the following bodies can fulfil?
(Please tick as many as you wish)

	Complete KM courses	Short courses	Seminars	Workshops	Practical training	Workplace- based learning
a) Professional bodies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Government agencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Commercial training organisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Libraries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Do you have a preference for any of the following program delivery modes?

	No Preference	Slight Preference	Preference	Strong Preference
a) Traditional face to face	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Electronic classroom- based	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Electronic distance education (including web- based delivery)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Mobile learning (via	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Mobile phones)				
e) Mixed mode delivery (combining distance and face to face delivery)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. How did you become familiar with KM concepts and practices? (Please tick as many as you wish)

- ☐ a) Academic courses
- ☐ b) Professional bodies' activities
- ☐ c) Courses provided by commercial training organisations
- ☐ d) Independent study, via academic/ research literature
- ☐ e) Other (Please specify)

8. Read each of the statements below and then tick the option in each question which best shows how you feel.

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
a) The LIS professions should engage more fully with KM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) The management of explicit knowledge is something which librarians do well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Librarians have the potential to manage tacit knowledge as well as explicit knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) To be effective knowledge workers, LIS professionals need	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

to gain new skills.					
e) Effective LIS programs will prepare graduates for work in KM teams; formed from various professional backgrounds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) It is better that LIS professionals focus on information management and leave other dimensions of KM with other disciplines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) The inclusion of KM can potentially enhance the status of LIS education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) KM should be a major priority for all providers of LIS education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. How do you feel about the following statements that relate to LIS educational programs, regarding knowledge management?

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
a) Knowledge-related competencies must be integrated into LIS curricula.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) LIS curricula need to address the cultivation of business competencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) LIS programs should help prepare graduates to play a wider organisational role	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) LIS education needs to make a clear distinction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

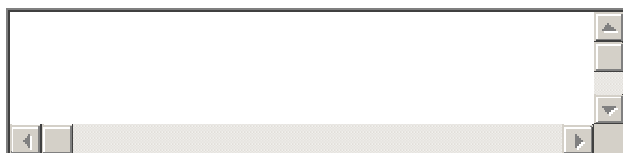
between KM and IM					
e) LIS educational programs need to focus on the management of internal as well as external knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) LIS programs need to focus on the management of both explicit and tacit knowledge.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Current changes in LIS education have led to improved knowledge management practices in libraries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Existing LIS curricula can meet the needs for knowledge management education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) There are insufficient links between current educational programs and KM practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Current LIS curricula do not equip students with the competencies demanded by KM environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) LIS curricula must change in order to respond to the challenges of KM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Could you please indicate your response to these statements about the responsibilities of LIS schools with regard to knowledge management?

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
a) It is essential that LIS schools become major providers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

of KM education					
b) The current response by LIS schools to the needs for KM education is inadequate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) LIS schools need to rethink their mission and strategies in respect of KM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) In responding to the challenges of KM, LIS schools must pay attention to the skill sets of academic staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) In responding to the challenges of KM, LIS schools must pay attention to the skill sets of students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) LIS schools need to reassess their curricula continually, in order to keep pace with the evolution of KM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) LIS schools need to cooperate with other disciplines in the design and implementation of KM programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) LIS schools need to cooperate with employers in the development and provision of KM programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) LIS schools need to train their educators before they embrace KM programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you perceive any other responsibilities for LIS schools in terms of knowledge management, would you please specify them here.



11. Can LIS-related courses contribute to promoting the following potential competencies among LIS graduates?

Please indicate your answer to each part of the question by clicking one number on each scale of 1 to 7. If you cannot answer a question, please move to the next one.

1 = Lowest

7 = Highest

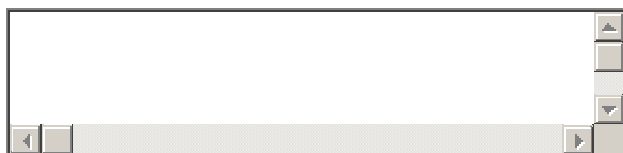
a) Leadership Skills	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
b) Communication and networking skills	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
c) Ability to use information technologies	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
d) Change management skills	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
e) Project management skills	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
f) Creative thinking	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
g) Information management skills	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
h) Team working skills	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
i) Decision making skills	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
j) Business acumen	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
k) Human resource management skills	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
l) Planning and organisational skills	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>

12. How do you feel about these potential benefits of KM education for LIS professionals?

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
a) KM educational programs can help LIS professionals move beyond the parameters of their professional mindset and expand their professional insights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) An association with increased knowledge-awareness will enhance the image of LIS professionals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Inclusion of a KM dimension to LIS education will contribute to an improvement in the self-image of LIS professionals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Acquisition of KM proficiencies will improve self-development skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Increased understanding of KM will enhance self-management skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Engaging with KM practices will lead to higher collaborative abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Fostering KM literacy among LIS professionals will make them more aware of the value of capturing and recording their working knowledge and experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

h) Promoting KM awareness among LIS professionals will Improve their ability to be effective team players	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Embracing KM in LIS education will enhance the position of LIS professionals in their workplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) KM educational programs will help LIS professionals to broaden their sphere of influence; by preparing them for involvement in a wider range of activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) KM education can encourage LIS professionals to become more value-oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) KM education can help LIS professionals to align more effectively with the objectives of their parent organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) KM education can help LIS professionals to respond more effectively to their users' needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n) KM education can provide LIS graduates with new career options	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o) The inclusion of KM programs could help LIS education to reduce the risk of becoming irrelevant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you believe that there are other benefits that have been omitted, could you please specify them here



13. How do you think the following subjects should be considered in the content of KM curricula?

	Zero	Low	Moderate	High	Very High
a) Information and its related issues; including information society, information needs and provision, information management, etc.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
b) Knowledge and its related issues; including knowledge-based economy, knowledge mapping, sharing, etc.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
c) Organisational and management issues; including human resource management, organisational behaviour, change management, project management, decision making, marketing, strategy, etc .	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
d) ICT; including computer and networks, information architecture, information systems, etc.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
e) Interpersonal issues; including networking and communication, team working and leadership, etc.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
f) Research and evaluation; including research methods, data compilation and analysis, survey design, interviewing techniques, etc.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
g) Practical dimension; including practicum/ internships, case studies, etc.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

If you consider that other potential content for KM courses in LIS curriculum has been overlooked, would you please specify it here.

14. To what extent do you think the following factors could help to determine the KM dimension to LIS education?

1 = Lowest

7 = Highest

a) The culture of the school	1	2	3	4	5	6	7
b) The nature of students who enroll for LIS courses	1	2	3	4	5	6	7
c) The competencies of LIS educators	1	2	3	4	5	6	7
d) The legacy of LIS education	1	2	3	4	5	6	7
e) The availability of non-LIS competencies embodied in management educators	1	2	3	4	5	6	7
f) New perspectives on educational outcomes	1	2	3	4	5	6	7
g) The demands of the market	1	2	3	4	5	6	7

If you see any other determinants please specify them here.

15. Which of the following would be likely to enhance the attractions of KM programs for LIS students? (Please tick as many as you wish)

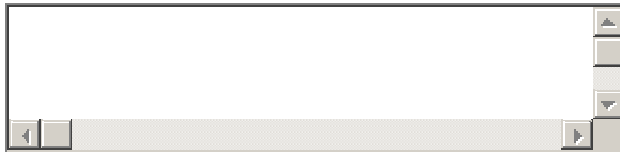
- ☐ a) New job opportunities
- ☐ b) Acquisition of new skill sets
- ☐ c) Opportunity to move beyond the traditional LIS domain (to acquire additional knowledge or working experience)
- ☐ d) Increased visibility in the job market
- ☐ e) Other (Please specify)

16. If you are currently a KM-educational provider, could you please tell us if you have encountered any of the following difficulties in responding to demands for course provision? (Please tick as many as you wish)

- ☐ a) Identifying the appropriate skills of KM-literate LIS professionals
- ☐ b) Determining suitable KM content for the LIS curriculum
- ☐ c) Cooperating with other disciplines in designing or conducting courses
- ☐ d) Creating an appropriate foundation for the program in terms of:
 - i) ☐ Educational environment
 - ii) ☐ Facilities
 - iii) ☐ Teaching and learning materials
 - ix) ☐ Staff competencies

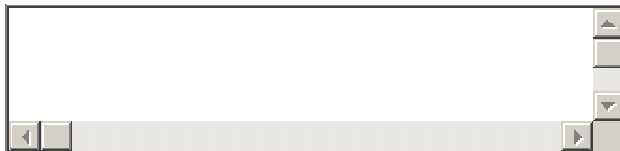
Please mention what you have done to resolve these. Meanwhile if you encountered any other problems, please specify them here.

17. Do you have any specific suggestions for improving KM education within LIS schools?

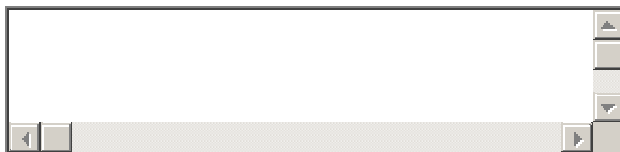


18. Are you aware of either of the following?

a) The implementation of knowledge management initiatives in library schools (Programs, cross-disciplinary alliances, change strategies etc) ? If so could you please provide details?



b) Successful knowledge management activities in library and information centres directly influenced by the KM element in LIS education.



19. General questions

a) In which country do you live?

b) What is your age group?

Under 25

c) What is your gender?

- ☐ Male
- ☐ Female

d) What is your current occupation?

e) What is your highest level of qualification?

f) Your email address (to send summary of results)

at is your highest level of qualification?

f) Your email address (to send summary of results)

Thank you for your participation

[Submit Questionnaire](#)

B) Invitation letter to the survey participants

Dear colleague ,

My name is Afsaneh Hazeri and I am a PhD student at RMIT University in Melbourne, Australia. I would like to ask your assistance with my research project concerning "The implications of knowledge management for library and information science education". The study aims to clarify the educational requirements of future knowledge-literate library and information professionals and to develop a new educational framework that reflects the changing needs of the profession in respect of knowledge management. In this project I will be investigating perceptions of and attitudes towards knowledge management education within the LIS profession using a number of international mailing lists with the kind permission of the list owners.

In case you have already completed an earlier survey circulated by one of my colleagues I should point out that her survey was concerned with the implications of knowledge management for the LIS professions, whereas mine is concerned with its implications for LIS education.

I believe that you can offer valuable insight to this project as well and I would be extremely grateful for your help in an exercise that I believe will be of real value to the library and information professions. Your participation should take around 30 minutes of your time and would make a major contribution to the outcome of my research project. All responses are voluntary and strictly anonymous and a summary of results will eventually be available to all who participate.

Information collected will be coded and kept in password-protected electronic media at RMIT University for academic research purposes only. The results of the survey may be reported in certain academic publications in a form that prevents the identification of any individual.

My research supervisor is Professor Bill Martin who can be contacted for any enquiries related to the project or its adherence to the formal privacy and ethical policies of RMIT University.

To respond the questionnaire you need to navigate to the survey website in the following web address:

<http://www.rmit.edu.au/bus/bit/thesis-km>

Thank you very much for your time and consideration,

Kind regards

Afsaneh Hazeri

E61534@ems.rmit.edu.au

C) Invitation letter to the interviews participants

Dear Colleague;

My name is Afsaneh Hazeri and I am a PhD student at the school of Business Information Technology at RMIT University in Melbourne, Australia. My supervisor is Professor Bill Martin and my thesis topic is "The implications of knowledge management for library and information science education". The study aims to clarify the educational requirements of future knowledge-literate library and information professionals and to develop a new educational framework that reflects the changing needs of the profession in respect of knowledge management. As the first part of the study we have already conducted an international online survey of LIS professionals to find out their perceptions, principles and terminology. I now need to conduct a second, more focused study of the views of Heads of LIS schools and their senior staff; mainly in English speaking countries, and I am writing to ask if you would be willing to participate.

What I am asking you to do is to participate in a telephone interview based on an analysis of the data emerging from the original survey. The interviews will last for a maximum of one hour and in some cases may be much shorter. The purpose is to discuss key themes and current trends in KM education within LIS schools.

Your participation in this study is of course voluntary and you may withdraw from the exercise at any time. The interviews will be subject to the rigorous privacy and ethics policies of RMIT University and neither you nor your school will be identified by name in any follow-up reports or papers. It is hoped to record the interviews for later analysis but naturally you will be able to call a halt to the recording process at any time during the interview. Information collected will be coded and kept in password-protected electronic media at RMIT University for academic research purposes only. After completion of the project the information will be stored in the office of my supervisor on RMIT premises for the period of 5 years and then will be destroyed. The results of the study may be reported in certain academic publications in a form that prevents the identification of any individual. The interview will revolve around the following broad themes.

- The rationale for the inclusion of KM within your programs
- The strategies and approaches you have taken in designing, conducting and promoting these programs
- Evaluation & the outcomes of these programs
- Your future plans & overall outlook of KM education within the LIS schools

Should you require further information or clarification on anything to do with these interviews, my research supervisor is Professor Bill Martin (Phone: +(61 3) 9925 5783 , e mail address: bill.martin@rmit.edu.au at PVC Business, Business Information Tech, RMIT) who can be contacted for any enquiries related to the project or its adherence to the formal privacy and ethical policies of RMIT University. Alternatively you may contact the Chair of Portfolio Human Research Ethics Sub Committee, Business Portfolio, RMIT, GPO Box 2476V, Melbourne, 3001. Phone number (03) 9925 5594 , fax (03) 9925 5595, or email address rdu@rmit.edu.au.

Kind regards

Afsaneh Hazeri

E61534@ems.rmit.edu.au

D) Ethics approval for the survey

PHRSC Register Number: Date Application Recd:
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RMIT**PORTFOLIO HUMAN RESEARCH ETHICS SUB-COMMITTEE****Application for Approval of Research Project**

(Note: This form is available on computer disk)

SUMMARY & APPROVAL

Project Title: “The Implications of Knowledge Management for Library and Information Science Education”

Name of Researcher: Afsaneh Hazeri Baghdadabad

Name of Senior Supervisor: Professor Bill Martin

Category of Research Project: 1

**Degree for which research is undertaken as part of a degree (if applicable): PhD
(Business Information Systems)**

School Name: Business Information Technology

Contact Telephone Number: 9925 1684

Email Address: S3095152@student.rmit.edu.au

<u>BUSINESS HUMAN RESEARCH ETHICS SUB COMMITTEE USE ONLY:</u>
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Date Application Received: 07-Sept-05

Portfolio Human Research Ethics Sub Committee Register No: 548

Period of Approval: 17 October 2005 to 28 February 2008

Comments / Provisos:

The candidate will submit an additional ethics application in the form of an amendment in order to conduct the interview component of the project. The application for amendment will include an upgrading of the project to Category 2.

The Business Human Research Ethics Sub Committee assessed the Project as Category 1

Signature: PHRESC Chair

Date: _____

E) Ethics approval for interviews

PHRSC Register Number: 590 Date Application Recd: 29-May-06
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RMIT**PORTFOLIO HUMAN RESEARCH ETHICS SUB-COMMITTEE****Application for Approval of Research Project**

(Note: This form is available on computer disk)

SUMMARY & APPROVAL

Project Title: "The Implications of Knowledge Management for Library and Information Science Education"

Name of Researcher: Afsaneh Hazeri Baghdadabad

Name of Senior Supervisor: Professor Bill Martin

Category of Research Project: 2

Degree for which research is undertaken as part of a degree (if applicable): PhD

School Name: School of Business Information Technology

Contact Telephone Number: 9925 1684

Email Address: S3095152@student.rmit.edu.au

<u>BUSINESS HUMAN RESEARCH ETHICS SUB COMMITTEE USE ONLY:</u>
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Date Application Received: 29 May 2006

Portfolio Human Research Ethics Sub Committee Register No: 590

Period of Approval: 25 July 2006 to 28 February 2008

Comments / Provisos: N/A

**The Business Human Research Ethics Sub Committee assessed the Project as
Category 2**

Signature: PHRESC Chair

Date: _____